

# MANUAL INSTALLATION AND USE OF THE LIGHTEST SYSTEM



Please consider your environment before printing this manual.  
Consider that Bikee Bike continually improves the manual and it would be a waste to print multiple versions



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# 1 Introduction

## 1.1 Acknowledgments

Dear Customer,

First of all, we would like to congratulate you on your choice and thank you warmly for the trust you have shown.

This is a well-placed trust, because the very high technological level and the quality of the materials ensure the perfect functioning of the e-bike conversion kit that you have purchased.

Our organization also allows us to guarantee customers a continuous and accurate assistance and maintenance service.

Read the manual carefully and scrupulously follow the instructions given in it, in order to obtain the maximum result in terms of safety and durability of the system over time.

All the procedures useful for dealing with any reasonably foreseeable emergency situations that may occur during use are also listed.

## 1.2 Notes on the manual

This manual contains instructions for installing, using and maintaining the Lightest engine. Bikee Bike Srl reserves the right to modify this document at any time without notice, for this reason we invite the user to always check that they are in possession of the latest revision, available for consultation at this link:

[www.lightest.bike](http://www.lightest.bike) or [www.bikeebike.it](http://www.bikeebike.it)

The manual is composed of various sections, each of which deals with a series of topics, divided into chapters and paragraphs. The general index lists all the topics covered in the entire manual. The numbering of the pages is progressive and its number is shown on each page. This manual is intended for the user responsible for installing, using and maintaining the e-bike kit, and concerns its technical life after its production, use and possible sale.

In the event that it is subsequently transferred to third parties for any reason (sale, loan for use, or any other reason), the product must be delivered complete with all documentation.

The information contained in this manual is not intended and cannot replace the knowledge and experience possessed by the user, who however has exclusive responsibility for the use for which the e-bike kit was designed. Before starting any operation on any unit, you must have at least read the entire manual and then studied the topic relating to the operations you intend to carry out.

This manual contains confidential proprietary information and cannot be provided, even partially, to third parties for any use and in any form, without the prior written consent of the manufacturing company.

The manufacturer declares that the information contained in this manual is consistent with the technical and safety specifications of the e-bike kit to which it refers.

A certified copy of this manual is deposited in the technical file, kept at the Bikee Bike srl company

The manufacturing company does not recognize any documentation that has not been produced, released or distributed by itself or by its authorized representative. This manual, like the entire technical file, will be kept by the manufacturer for the period required by law (10 years). During this period, a copy of the documentation accompanying the product may be requested at the time of sale. The entire technical file remains available for this period exclusively for the supervisory authorities, who may request a copy. After this period, it will be the obligation and responsibility of those who manage the product to ensure that both the product and the documentation comply with the laws in force at the time of the inspection.



### 1.3 Symbols

	Indicates a risk to the user or device. Respect the message scrupulously.		Further information given in the margin of the paragraph.
	Tip for quick and correct use of the device.		Quick press
	Indicates essential information, to be read, understood and respected carefully		(less than 1 second)
	Positive + button on the display		Long press
	Negative key - of the display		(more than 3 seconds)
[1]	In square brackets there are references to the components present in the first image.	KB	Abbreviation for "Kit Bikee Bike"
BB	Abbreviation for "Central Movement"	THR	Throttle abbreviation, throttle
TSN	Abbreviation Torque Sensor, torque sensor	PAS	Abbreviation for Assisted Pedaling (based on cadence and not torque)

### 1.4 Definitions

**CE marking** : process of preparing the technical file, which collects the documentation of everything that the producer/manufacturer/importer/agent has carried out or verified, to create a safe product that complies with European directives and standards.

**CE marking** : affixing the CE mark with various methods and supports on products released for free circulation.

Release for free circulation: making a product available to a third party, in any form (sale, rental, loan for use, gift, alienation, etc.)

**Modification/adaptation** : activities that change the situation of the product compared to the original, defined by the manufacturer, this activity determines the need to re-brand the product, in compliance with current laws.

**Manufacturer** : anyone who puts a product into free circulation by indicating only his name on the documents accompanying it.

**Directive** : document issued by the European central authority and which regulates the safety of a category of products. It must be implemented by every single State of the Union to have the force of law in that State.

**Regulation** : document issued by the central European authority which has the force of law throughout the territory of the European Union, without the need for transposition by individual states.

**Standard** : document issued by a private institution and which has indicative value of a good way of operating, has legal value only if supported by a specific government decree.

**Harmonized standard** : document issued by a private organisation, which is valid throughout the European territory and has the value of law if subordinated to a Regulation. Compliance with a standard is always and only a "presumption" of compliance with the directive or regulation with which it is harmonized.

**Declaration of conformity** : document that must be issued and signed by the manufacturer and which must accompany each product or batch of products.

**CE label** : indications that must be present on the product or its packaging, which briefly indicates that the manufacturer has fulfilled the safety obligations established by law.

**CE certificate** : document issued by a private body, which certifies that a single sample has passed certain tests. The certificate can be imposed by law or voluntary, but it never replaces the CE marking, as it makes no reference to series production, it can therefore be supplementary, never replacing the CE marking.

**Machine** : set of mechanical and non-mechanical elements of which at least one is mobile thanks to non-human force, even if without an applied energy source, but which is intended to be coupled with an energy source. The set of several machines, which then become "almost machines", in turn becomes a machine. Lifting systems, even if manual, also fall under the machinery directive. "Machines" are also defined as systems or systems in which there are machines, such as pumps or operational electric motors, or in any case components that fall within the scope of the Machinery Directive.



## 1.5 Declaration of Conformity

The machine is accompanied by the declaration of conformity drawn up in accordance with the laws in force in the European territory.



Before using the machine in any form, check the presence of the declaration of conformity.



If the machine is sold to third parties, all documentation must be delivered together with it.

Name of Legal Representative	Matteo
Surname Legal Representative	Spaggiari
Company name	Bikee Bike Srl
Company headquarters	Legal: Via Zeni, 8 – 38068 – Rovereto (TN) Operational: Via Maestri del Lavoro 7/A, 46100 Mantua (MN)
VAT no	02334050222
Office Tel	+39 0376 390846
E-mail	<a href="mailto:info@lightest.bike">info@lightest.bike</a>
Website	<a href="http://www.lightest.bike">www.lightest.bike</a>

The undersigned Matteo Spaggiari

As legal representative of the Bikee Bike Srl company

with registered office: Via Zeni, 8 – 38068 – Rovereto (TN)

VAT number: 02334050222

### He declares

that the person responsible for managing the technical file is Eng. Matteo Spaggiari

### It also states

that the product: Ebike conversion kit consisting of gearmotor, battery and electronic drive

Model and code: LIGHTEST

Year of modification and new marking: 2023      Serial number: IDxxxxxx (xxxxxx number from 0 to 999999)

It was built respecting the following directives and standards:

1. Directive 2006/42 EC known as the Machinery Directive
2. Directive 2014/35/EU known as the "Low Voltage Directive"
3. Directive 2014/30/EU known as the "Electromagnetic Compatibility Directive"
4. Directive 2011/65/EC known as "RoHS"
5. Directive 2012/19/EU known as "WEEE"
6. Directive 2001/95/EC note "General product safety"
7. UNI EN 15194:2012 standard - Bicycles - Pedal-assisted electric bicycles - EPAC bicycles (applicable only for 250W versions)

And it is therefore compliant with current directives and regulations.

This declaration of conformity is issued under the sole responsibility of the manufacturer.

Date: 10/04/2023

Signature: \_\_\_\_\_

The warranty provisions, listed in full in the purchase contract, are valid only if the ebike kit is used in the conditions of intended use.

With the exception of ordinary and extraordinary maintenance interventions described in the [MAINTENANCE section](#) and carried out with the procedures indicated, any repair or modification made to the product by the user or by unauthorized companies will void the warranty.

The warranty does not extend to damage caused by incompetence or negligence in the use of the product, or by bad or omitted maintenance.

The products sold by us are covered by warranty regarding the following conditions:



1. The warranty is valid for a period of twenty-four (24) months on the product and 500 cycles on the battery.
2. The manufacturing company undertakes to replace malfunctioning or incorrectly manufactured parts at its discretion, only after careful inspection and verification of poor construction.
3. The buyer is always responsible for transport and/or shipping costs in the event of incorrect use of the guarantee. Shipping costs are borne by the manufacturer for the first 6 months of the product, after which they will be borne by the customer.
4. During the warranty period, replaced products become the property of the manufacturer.
5. Only the original purchaser who has complied with the normal maintenance instructions contained in the manual can benefit from this guarantee. Our warranty liability expires when: the original owner relinquishes ownership of the product, or modifications are made to it.
6. The warranty does not include damage resulting from excessive stress such as the use of the product after the discovery of an anomaly, extreme off-road use, violent impacts or falls, the use of inappropriate exercise methods or failure to observe of the use and maintenance instructions.
7. The manufacturer assumes no responsibility for any difficulties that may arise in resale or use abroad due to the provisions in force in the country in which the product was sold.
8. The product or part of the defective one must be delivered to the manufacturing company or to an authorized service center for replacement; otherwise the replaced part will be charged to the buyer.
9. The warranty is voided if the product is opened (seal removed).
10. Only original parts and components are used.
11. The battery is kept with a charge above zero.

If it is deemed necessary to use the guarantee, please indicate the following data:

1. Engine ID (visible on the bottom fin of the engine).
2. Purchase date (presentation of purchase document).
3. Detailed description of the problem.



Failure to comply with the methods of intervention and use of the product described in this documentation will result in the warranty terms becoming invalid.



## 1.6 Warnings

If part of the documentation is even partially missing or illegible, consult technical assistance before carrying out any further operation.

The personnel responsible for the installation, use and maintenance of the ebike kit must read the use and maintenance manual, paying particular attention to the general safety regulations and the methods of execution contained in the sections relating to the operations under their responsibility.

This chapter describes the general safety rules to be observed during any operation carried out with the kit. The intervention procedures, described in the following chapters, must be carried out respecting both the indicated execution methods and the general safety regulations in this chapter.

Different countries may have different regulations regarding safety. It is therefore specified that in all cases in which the rules of the manuals are in conflict or reductive compared to the rules of the country in which the ebike kit is used, the rules of the country will still have priority over those of the manuals.



The manufacturing company cannot be held responsible in any case for accidents or damages resulting from the use of the product by personnel who are not adequately trained and delegated or who have made inappropriate use of it, as well as from even partial failure to comply with the safety and security regulations. intervention procedures described in the manuals.



The lightest kit is intended for installation on bicycles and has external moving gears that mesh with the transmission chain, typical of bicycles. Some of these exposed gears are moved by the engine and this intrinsically involves the risk of crushing, stacking. **It is absolutely forbidden to drive the vehicle with loose trousers or long skirts that could get caught in the gears**, to avoid this danger.

## 2 Security

### 2.1 Safe use



Since it would be impossible to describe all the operations that must not or cannot be performed, it is believed that all operations (other than normal) that are not explicitly described in the documentation are to be considered infeasible.

During use of the ebike kit, after installing it on a bicycle that supports it, incorrect functioning situations not foreseen in the manuals may occur. These anomalous situations can be caused by environmental factors or accidental failures unforeseeable by the manufacturer.

If any unexpected anomaly occurs after powering the kit, it is necessary to:

1. Turn it off
2. Check for any errors via the "LIGHTEST" app.
3. Contact technical support immediately and report any errors found.

If an unexpected anomaly occurs after connecting the kit to the battery charging system:

1. Disconnect the power supply of the place to which it is connected.
2. Remove the battery charger plug from the socket.
3. Contact technical support immediately.

If you believe you need to carry out an operation or intervention that is not foreseen or following a procedure different from those indicated in the documentation, before proceeding, consult the manufacturing company to verify its feasibility (the company's data can be found in the DECLARATION OF CONFIRMITY section).

The manual must be kept by the user who has been assigned the task of installing, using and maintaining the kit. In the event of deterioration or loss, the Customer may request a certified copy from the manufacturer, or it may be downloaded from the website [www.lightest.bike](http://www.lightest.bike). We suggest keeping a backup copy in a place where it cannot be damaged or lost.



To prevent dangerous situations, all users of the kit in question must carefully read the use and maintenance manuals, making sure they understand the methods of use and intervention before starting to use it.

### 2.2 Protections and Pictograms

The engine sprocket (engine and its parts) are protected by a cover, which requires specific equipment to circumvent. This guard must never be removed except for specific maintenance operations. At the end of the work carried out it must be reassembled correctly and its stability must be checked.

Before, during and at the end of use it is necessary to take into account the following pictograms.





<p>Risk of crushing and entanglement with moving parts</p>	<p>Danger of electrocution, disconnect power before carrying out any maintenance work</p>	<p>Prohibition on removal of guards</p>	<p>Obligation to read the use and maintenance manual</p>



Warning signs that perform a safety function must not be removed, covered or damaged.

### 3 D escription

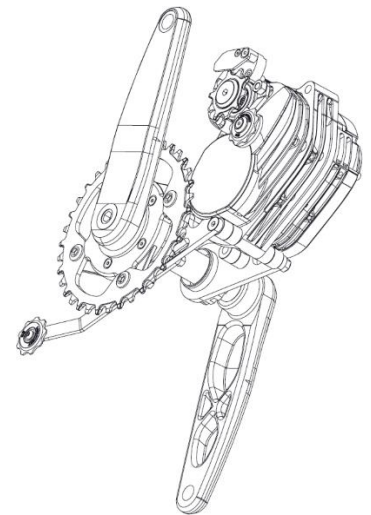
#### 3.1 Intended use

The motor uses mid-drive technology, which places the engine in the bottom bracket of the bike, between the pedals. The new patented technology reduces the size of the engine while increasing the driving torque.

The engine transfers motion through the bike chain, thus being able to exploit all the gears of the rear wheel by combining them with two front chainrings, a small one for climbs and one for speed. These two features transform every bike into an electric bike capable of easily tackling climbs of up to 58% inclination.

Bikee Bike LIGHTEST is available in four power versions: 250W suitable for European regulations, 500W for Switzerland and Canada, 749W and 1000W for the American market.

The product described in the manual is a kit for converting normal bicycles into powerful electric bicycles, in just a few minutes.



It is forbidden to modify the control system of the product. Bikee Bike srl does not assume responsibility deriving from inappropriate and unauthorized use of the product following tampering and/or negligence by a user.



### 3.2 Technical data

Drive unit dimensions	Width: 100mm Length: 148mm Height: 105mm
Power	250W 500W 750W 1000W
Drive unit weight:	1.75kg
Degree of protection	IP55
Full speed:	250W: 25Km/h 500W: 25Km/h 750W: 42Km/h 1000W: 42Km/h
Minimum - maximum voltage threshold	28V - 65V (from 10series to 15series)

## 4 Intended use and non-intended use

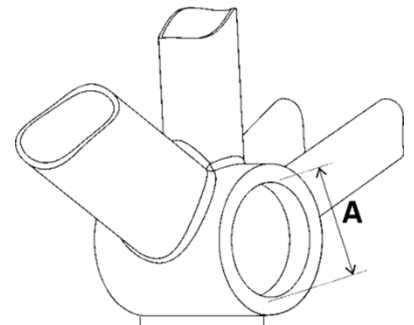
### 4.1 Intended use and compatibility

LIGHTEST was designed and built solely and exclusively to be used as a kit to convert a normal bicycle into an electric one (pedal assisted). The compatible bicycles are the kit are:

1. Mountain biking
2. City Bike
3. Fat Bike
4. Racing bike
5. Lightweight cargo bikes (maximum total load capacity 150kg, including rider)

Measure the two dimensions of depth [ B ] and diameter [ A ] and consult the table below to identify the correct configuration of plates and accessories.

These dimensions cannot be measured with the bottom bracket installed. To avoid unpleasant inconveniences, dismantle it and carry out the measurements, sharing them with the company.



First name	Typology	Depth	Diameter	Compatibility	Bush code
BSA (English)	With Fillet	68/73mm	34.8mm	Standard	It's no use
Italian	With Fillet	70mm	36mm	Incompatible	**
BB30	Without fillet	68mm 73mm	42mm	Bushing required	Adapter*
PressFit 30 (PF30)	Without fillet	68mm	46mm		
		73mm			
		83mm			
OSBB	Without fillet	68mm	46mm (carbon) 42mm (metal)		
BB86	Without fillet	86.5mm	41mm		
BB90	Without fillet	90.5mm	37mm		
BB92	Without fillet	92mm	41mm		
BBright Direct	Without fillet	79mm	42mm		
BBright - PressFit	Without fillet	79mm	46mm		
BB386EVO	Without fillet	86.5mm	46mm		
PressFit GXP	With Fillet	90mm	42mm		
Fat	With Fillet	100mm	34.8mm		
PressFit 41 (Fat)	Without fillet	121mm	41mm	Bushing required	Adapter*

\*Check the correct adapter on the website [www.ligtest.bike](http://www.ligtest.bike). \*\*Contact the company for support.



## 4.2 Unintended use

No use other than those described in the "INTENDED USE" section (page 17) is intended.

It is also prohibited:

1. Using the ebike kit for uses other than those intended.
2. Tamper with/modify the product.
3. Do not respect the power supply characteristics of the kit indicated in Technical data.
4. The replacement of parts and components of the machine with others not recognized by Bikee Bike srl

The reuse of any part of the kit after it has been taken out of service relieves the Bikee Bike srl company from any liability arising from its use.



Bikee Bike srl cannot be held responsible in any case for accidents or damages resulting from unintended uses of the product.

## 4.3 Residual risks



Maintenance operations must be carried out following the instructions in this manual. Maintenance operations other than those indicated in this manual release Bikee Bike srl from any liability.

Pictograms are applied to the components of the kit (see [PROTECTIONS AND PICTOGRAMS](#)). They must be kept clean and restored whenever they are removed or damaged.



In operations in areas with moving mechanical parts it is necessary to use personal protective equipment (PPE) or gloves, including class I <sup>a</sup>gloves.



Access to the closed, protected or internal parts of the product must be carried out only for maintenance operations, only by qualified personnel who have previously read the manual.

1. Do not put your hands, or objects held with your hands, where there are moving parts.
2. Do not wet the electrical connections with water or other liquids.
3. Make sure that the area where maintenance operations are carried out has lighting of at least 200lux.
4. It is necessary to carry out the maintenance described in the manual.
5. The [MAINTENANCE section](#) indicates the operations in which it is not necessary to disconnect the system from charging or disconnect the battery.
6. Removable crankcases have indications on the crankcase itself.
7. If you work on the transmission parts, make sure that the kit is turned off, to avoid accidental operation of the torque sensor lever which would operate the engine.
8. If you work on electrical parts, make sure they are not live





## 4.4 Operations involving risks for the operator

During commissioning operations, follow the general accident prevention regulations.

Already in the design phase, solutions were adopted aimed at making the use of the product safe in all phases of use: transport, activity and maintenance. Nonetheless, not all possible risks for users and the environment have been eliminated, both for technological reasons (device reliability) and management reasons (excessive difficulties in elimination), consequently the residual risks present are reported, e.g.: shearing, electrocution, entanglement, crushing etc....



Never move the bike or carry out maintenance work with the kit turned on.



The lightest kit contains a lithium ion battery. Never move the bike or carry out work with the kit turned on

You also need to pay attention to the following points regarding the battery:

1. Do not short the positive and negative terminals of the battery.
2. Do not disassemble or scratch the battery.
3. Do not expose the battery to high temperatures, near open flames or corrosive agents such as alkaline acids or freezing water.
4. If stored for a long time, keep the battery in a cool, dry place and charge the battery for two hours every 3 months of non-use.
5. Never store the battery completely discharged, charge it to 40/60% if it is not going to be used for a period of time.
6. Use only the original charger.
7. Charge the battery away from flammable objects or liquids.

## 4.5 Product integrity

Upon receipt, check the integrity of the ebike kit and its parts. If you find any damage, lack, deformation or traces of impacts due to transport, notify Bikee Bike srl before proceeding with subsequent operations.

In particular, check the integrity of:

1. Packaging
2. Electrical power cables
3. Engine casing
4. ON/OFF switch located on the battery
5. Battery case
6. Signal connectors, power phases

Check that the packaging is not subject to external agents that could deteriorate it or have damaged it.

## 4.6 Manual handling

The weight of the kit is shown on the plate glued to it and in this manual.

The kit and its assembled components can be moved manually. The shape and size of the components allow you to grip them comfortably and easily in different ways.



Pay particular attention to the position of the back during a movement phase (see figure below)



Incorrect red position

Correct green position

Approximate values for maximum weight (in kg), frequent or occasional maintenance.

Age	Men		Women	
	Occasional	Frequent	Occasional	Frequent
4pm - 6pm	19	14	12	9
6pm - 8pm	23	17	14	10
20 - 35	25	19	15	11
35 - 50	21	16	13	10



Over 50	16	12	10	7
Pregnant women: First 6 months of pregnancy			10	5
Pregnant women: From the 7th month			0	0

## 4.7 Environmental and supported conditions

Temperature

1. Operating: -15°C to 40°C.
2. Not in operation: -15°C to 50°C.
3. During storage and before use: -15°C to 40°C.

Relative humidity (non-condensing)

1. Operating: 30% to 95% ±5%.
2. Not operating: 30% to 95% ±5%.
3. During storage and before use: 30% to 80% ±5%.

## 4.8 Battery charging

The flat battery is signaled by the green LEDs on the battery turning off. It is also possible to check the battery charge level from the smartphone app and from the LED indicators installed in it.

The lighting system (natural and/or artificial) of the kit charging area must ensure the following minimum lighting values: 200 lux.

1. The battery charging area must meet the following requirements:
2. The connection with the electrical power supply line must be arranged in such a way as not to create interference with the maneuvering spaces of the users who use the environment in which it is connected.
3. The chosen position must allow easy connection of the plug to the power supply line.
4. Connection cables must not be placed on the floor.
5. The position must be chosen so that it cannot be hit by jets of steam, water or other liquids.
6. Make sure the connector and plug are not wet.

To recharge the battery you need to follow the following instructions:

1. Open the rubber cover containing the connector, located on the bottom of the battery
2. Connect the battery charger supplied with the kit to a power socket and then insert the charging connector into the dedicated input. A red light indicates that the charging operation is in progress.
3. When the red light turns green, it indicates that the charging process is finished.



The battery must never be left discharged: this causes irreparable damage to the battery and voids the warranty on the battery. If the battery is completely discharged, it must be recharged promptly.

If you want to store the battery for a long period, it is mandatory to check monthly that the charge is at approximately 50%. If the charge value drops below 40%, it is recommended to restore the charge to approximately 60%.



## 5 Installation



In operations in areas with moving mechanical parts it is necessary to use personal protective equipment (PPE) or gloves, including class I ° gloves .



CAN see the kit installation video at the link:

<https://www.youtube.com/watch?v=iLcN42IK4Uc>

Or alternatively scan the code on the side



Always and only use original components supplied by the manufacturer.  
Other items can damage the system and cause injury to the user.

It is absolutely forbidden to use cranksets not supplied by the manufacturer.

In cranksets not supplied by the manufacturer, the safety free wheel is missing, therefore using the motor without this safety causes serious injury to the user.




Bikee Bike does not recommend making long journeys immediately after installation, even if the kit has been installed by expert personnel. In fact, it is very likely that adjustments will be necessary which would become complicated.  
It is recommended to run in the vicinity of at least 100km to guarantee the reliability of the installation.



### 5.1 Package contents

The components available in the kit are listed below, for simplicity all the possible components are listed and the asterisk \* indicates the accessories present only if expressly identified on the purchase order.

 <p>165mm square spindle or ISIS cranks (pair) (screws included depending on version)</p>	 <p>Chainring BCD104 with screws, with number of teeth depending on the order</p>
 <p>Freewheel[3], Spider[5], 2 drilled spacers[4,5]</p>	 <p>Pinion[14], Seeger 15mm[13], M8 screw[12]. The number of pinion teeth varies depending on the order.</p>
<p><input checked="" type="checkbox"/> The sprocket is compatible with chains up to 11 speeds</p>	

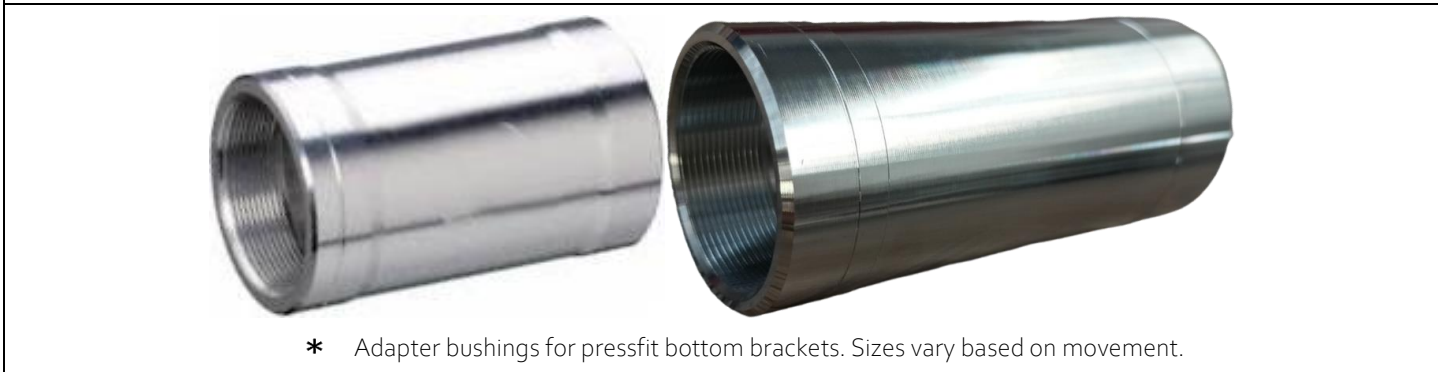




Screw bushing, plastic pinion, \*standard, long and inframe TSN levers, M6x0.75mm nut



Rear chain guide rod



\* Adapter bushings for pressfit bottom brackets. Sizes vary based on movement.



Cable covers



\* Front chain guide, sprocket cover



\* Wheel Sensors, various models depending on the chassis and engine versions. Spoke magnet





Motor connection cables Display. Standard type on the left and \*SuperHero (with brake connection, throttle) on the right.



\* Half, lever, full throttles



\* Sensor changed



\* Brake sensors (torque) with magnets and stickers



SW102-V2 display



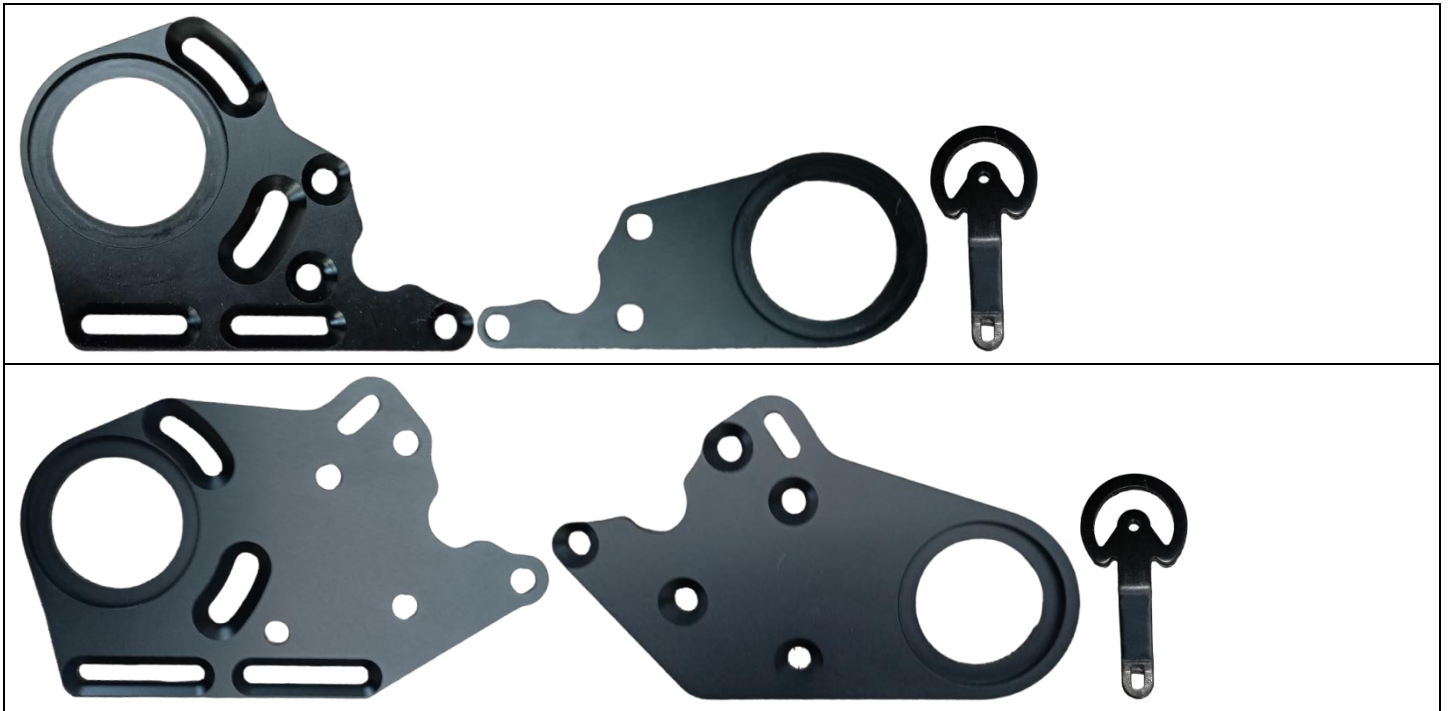
## 5.2 Detail of screws

Below are the screws available in the kit, for simplicity all the possible screws are listed and the asterisk \* indicates the screws that may be missing or reduced in quantity as they are linked to accessories that are not always included.

 [A] 2x Nut M6x1mm	 [B] 8x M4 Self-Locking Nut*	 [C] 2x M3 Self-Locking Nut*	 [D] 1x Nut M6x0.75mm
 [E] 9x 4x12mm Countersunk Screw	 [F] 5x 4x16mm countersunk screw	 [G] 6x 4x20mm Countersunk Screw*	 [H] 4x 3x20mm countersunk screw*
 [I] 2 or 3 depending on the version 6x90mm countersunk screw		 [J] 2 or 3 depending on the version 6x120mm countersunk screw	
 [K] 2x Screw 4x16mm*	 [L] Adjustment Spacer Washer 35x45mm	 [M] 2x M4 Washers	 [N] 2x M6 washers
 [O] 4x 6x20mm Countersunk Screw	 [P] 3x 10mm milled spacer. For long mount only	 [P] 3x 5mm spacer	 [P] 3x 10mm spacer



### 5.3 Standard Mount (SHORT and MEDIUM)



### 5.4 Long and In-Frame





5.5 Hybrid







### 5.6 Press-fit adapter assembly

There are frames with pressfit BBs on the market . Normally these frames are not compatible with the installation of the engine, but through a special bushing created specifically for the customer it is possible to adapt the engine to the frame.

For a complete list of pressfits please see section [3.1 INTENDED USE AND COMPATIBILITY](#).



The various BBs have very small differences even on the order of a millimetre. Carefully measure the dimensions required to obtain the exact size bush otherwise the installation will be severely compromised or it will not even be possible to proceed.



Recheck the diameter that the depth of the BB coincides with those of the bushings. The recommended tolerances for diameter are  $\pm 0.3\text{mm}$ . The width of the bushing must be equal to or less than that of the BB



Wet the inside of the bike BB and the surface of the bushing with high-strength threadlocker.  
Be careful not to dirty the threaded part and the frame.



Before inserting the bushing, let's check the direction.  
The side to be placed on the chain side (right) is marked by an engraving.



We proceed to insert the bushing, keeping the incision on the side of the chain (right), normally it enters with modest manual pressure.

If you have difficulty you can help yourself with a screw and the appropriate tools used to install the pressfits . (Tools not included in the kit). If the insertion is too rigid, do not insist and contact the company.



Once insertion is completed, the bush must absolutely not protrude from either the left or right side.

Wait for the threadlocker to dry completely before proceeding with the installation.





### 5.7 Crank assembly

<p>Only if necessary to align the chain: Insert the spacer [4] on the freewheel [3], on the side without writing</p>	<p>Join the spider [5] on the two components</p>	<p>Align the holes of the three components</p>
<p>Insert the screws [E], or if spacers [4] are present, the screws [F]</p>	<p>Put the 5 self-locking M4 data [B]</p>	<p>Screws with a torque of 0.8Nm</p>
<p>Repeat the previous step for all 5 screws</p>	<p>Position the chainring [1] on one of the two sides, based on the chain line to obtain.</p>	<p>Place the chainring screws into the holes</p>
<p>Carefully check that the writing identifying the number of teeth on the chainring is facing the frame</p>		



Screw the locknut with a max torque of 14Nm



Repeat the previous operation for the 4 screws

### 5.8 Chain guide assembly Torque sensor

- The arm may differ in shape. However, one or more M4 holes remain available in which to position the screw and the remaining components mentioned here.



Prepare the M4 washer [M], the 4x12 screw [E]



Insert the washer [9] into the pulley [18]



Insert the 4x12mm screw [E]



Insert the M4 washer [M]



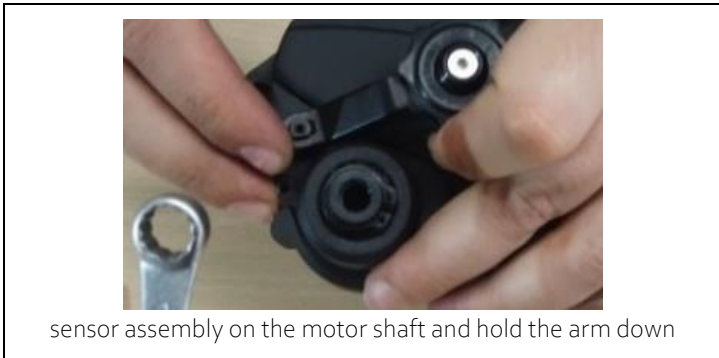


Screw the assembly onto the arm 13.11 with a torque of 0.5 Nm **Put some threadlocker on the thread**

Proceed to assemble the arm on the engine.

In the case of in-frame installation it may be more convenient to insert it at the end (as described in the INFRAME section)

	Do not exceed 20° of rotation of the TSN arm. If this angle is exceeded the spring could be damaged. This type of damage is not covered by warranty.
	The torque sensor nut is a special nut, it has a fine tread to a finer thread to ensure a better grip. Using other nuts than those indicated causes permanent damage to the thread.



sensor assembly on the motor shaft and hold the arm down



Insert fully, always keeping the torque sensor arm pressed



Take nut M6x0.75mm [D]



Tighten with the 10 wrench with a torque of 0.8Nm  
(Key not included)  
**Put some threadlocker on the thread**

		Periodically check that the 14mm seeger on the pinion shaft is in position. We recommend to not disassemble and reassemble the pinion and the torque sensor arm often because these components are delicate and the presence of thread locker increase the torque to apply in the operation with the possibility to damage them.
--	--	---



Take the pinion [14]. Place it on the engine



Screw the screw [12] into the shaft  
Add a drop of medium thread lock



Screw well with Allen key and parrot



Do not exceed 20° of rotation of the TSN arm. If this angle is exceeded the spring could be damaged. This type of damage is not covered by warranty.

### 5.9 Assembling the chain guide on the engine

The following procedure explains the steps to attach the front chain guide. This chain guide is not mandatory, but is recommended to have a more reliable hold of the chain with the various rear gears. This component is supplied as an optional accessory.



The front chain guide is not compatible with inframe installations



Take the components [20] and the cap screw [K]



Position the larger part [20] as in the photo and screw the first screw [K] lightly



Tighten the second screw [K] lightly.  
Adjust the position using the buttonhole



After adjustment, tighten both screws with a maximum torque of 2Nm and medium resistance thread lock


The component [K] and its screws will be positioned after installing the chain.

CHAIN GUIDE COMPLETION section for final steps.




### 5.10 Adjusting the spacers on the pedal shaft

The additional bearing and spacers that follow are only present in some versions as accessories



If on the pedal shaft, on the left side, the shaft moves radially and is therefore not well pressed by the bushings, it means that the bushing is not able to press the bottom bracket bearings



Then disassemble the bottom bracket and add the additional bearing from the left side



This is the final result. Then reassemble the bottom bracket to complete the installation



On some bottom brackets the additional bearing may be excessive. Therefore, some versions include 1.5mm spacers that can be inserted behind the bearings.

Spacers give another advantage: by positioning them on the right and/or left you can change the position of the shaft, consequently the position of the cranks and also the alignment of the chainring.

Example for 68mm (136mm shaft)



Example for 73mm (136mm shaft)



The examples alongside can give an idea of installation for a 68mm and 73mm bottom bracket, but it is very likely that it will be necessary to modify the quantity or position of the spacers depending on the frame used.

Example for 68mm (122mm shaft)



No spacer needed (only behind the right crank quoted at the end of this page)


Example for 73mm (122mm shaft)



2x 1.5mm spacers for each side  
2x 0.75mm white spacers (plus the spacers behind the crank quoted at the end of this page)

Please note that the 122mm shaft has 13 spacers on the right in the 68mm version and 11 spacers in the 73mm version.

It is important not to forget to put these spacers because they give stability to the right crank.

 When using the spacers behind the crank you must pay attention that the crank penetrates the shaft sufficiently and the taper of the shaft begins to work and block the crank. To do this it may be necessary to reduce the numbers of spacers in order to find the right compression compromise.

For pressfit g2 the use of the square pin shaft is not recommended





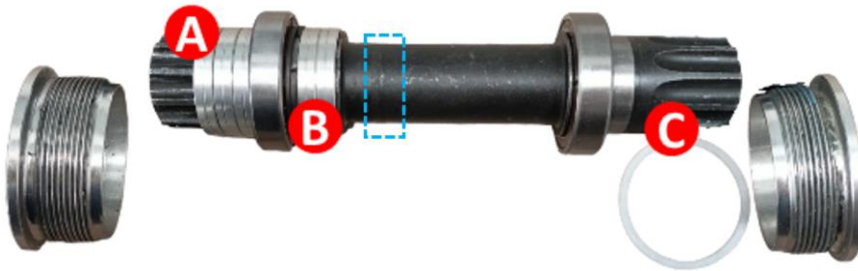
For owners of an ISIS shaft we report some examples of the most common positioning.

We reiterate that adjustments are often necessary due to different tolerances of frame manufacturers or to obtain better chain alignments.

- ☑ The abbreviation "SB23" will be used for the 23mm seegers, "SB30" for the 30mm seegers, "DIST" for the 4mm gray spacers and "T075" for the 0.75mm white Teflon washer.

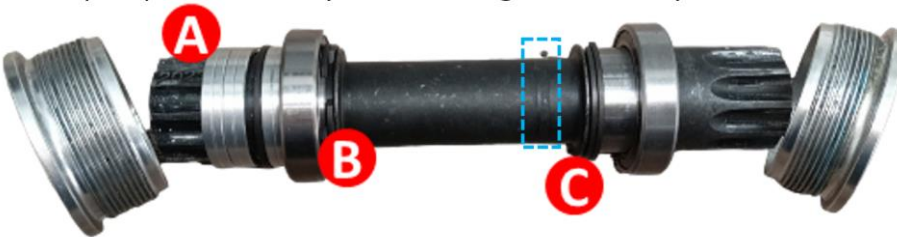
In blue the side on which the engraving identifying the verse is is highlighted

Example for 73mm (124mm long shaft)



- A. 3x DIST
- B. 2x SB23 + 2x DIST
- C. 1x T075

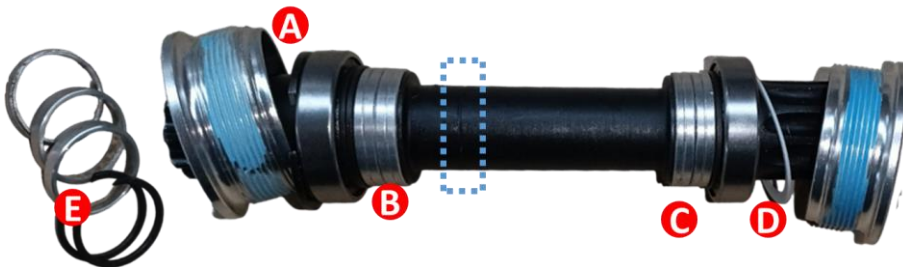
Example for 68mm (124mm long shaft)



- A. 3x DIST + 1x SB23
- B. 2x SB23
- C. 2x SB23

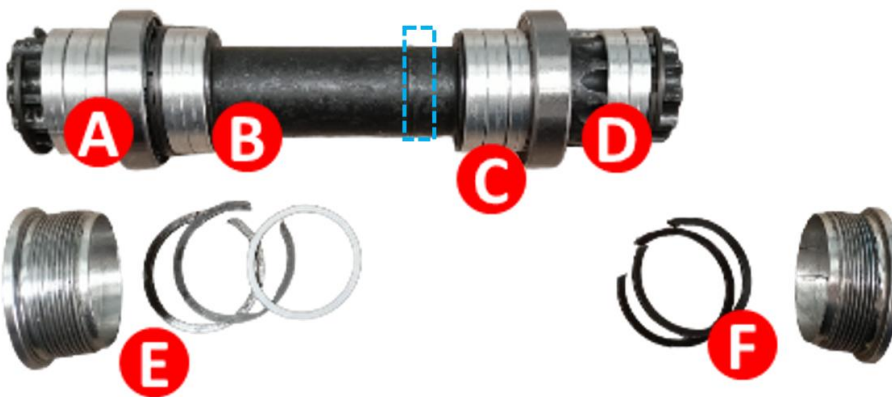
Chaining side

Example for 92mm or 89mm (137mm long shaft)



- A. 1x SB30
- B. 2x SB23 + 2x DIST
- C. 1x SB23 + 2x DIST
- D. 1x T075 -> use T250 with 92mm
- E. 2x SB23 + 3x DIST

Example for 92mm or 89mm (128mm long shaft)



- A. 1x SB23 + 3x DIST
- B. 2x SB23 + 2x DIST
- C. 3x DIST
- D. 2x SB23 + 2x DIST
- E. 2x SB30 + 1x T075 -> use only one SB30 in case of 89mm
- F. 2x SB30

- ☑ The spacers positioned externally to the bearing, **A** on the chaining side, serve to obtain a certain stop of the crank. Their number must be adjusted, in such a way that the crank rests firmly on them.



### 5.11 Engine installation with Medium or Short brackets

The medium and short plates have the exact same installation procedure. The only two differences concern the insertion of the screws and the clamp. These differences are highlighted in the procedure.

 <p>Prepare the left plate [10]</p>	 <p>Insert the two M6 screws. Depending on your frame, choose [I] or [J]</p>
 <p>Add the spacers [15] and [16]. Quantity varies based on frame.</p>	 <p>Insert the screws into the motor</p> <p style="text-align: center;"><b>In the SHORT MOUNT the screws enter from the opposite side</b></p>
 <p>Insert the spacers [15] and [16]. Quantity varies based on frame.</p>	 <p>Place the right plate [11] into the screws. Insert 2 M6 washers [N]</p>
 <p>Screw the 2 M6 nuts [A] Put some threadlocker on the thread</p>	 <p>Tighten well</p>



If included, add the 3rd screw with spacers for better stability



Place the motor on the bottom bracket



Insert the bottom bracket [22]



Tighten the bottom bracket



Screw the opposite bushing

See [ADJUSTING THE SPACERS ON THE PEDAL SHAFT](#) for managing the spacers on the pedal shaft.





### 5.12 Engine installation with Long or Hybrid brackets

The long and hybrid plates have a similar installation procedure. The only difference is in the plates that the bushings fit into. In fact, the medium ones are shorter, maintaining the classic fixing holes.

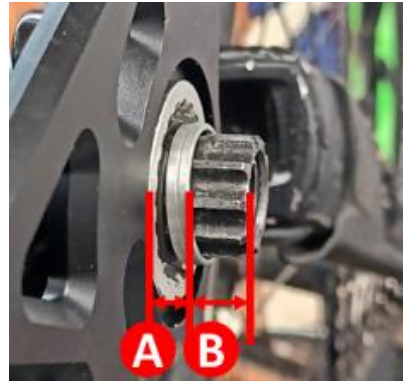
During the installation shown, the bicycle was placed upside down on a table to have the bottom bracket in a position convenient for the installer.

In the procedure reference is made to a pressfit 92 with ISIS shaft.

<p>In this installation it will be necessary to assemble and disassemble the bottom bracket several times to obtain the right number of spacers on the shaft. To avoid ruining the fillets, grease them.</p>	<p>Insert the shaft. See <a href="#">ADJUSTING THE SPACERS ON THE PEDAL SHAFT</a> for managing the spacers You can use a configuration suggested in the previous section.</p>
	<div style="display: flex; align-items: center;"> <div style="text-align: center; margin-right: 10px;"> <p>SOTTILE SINISTRA</p> </div> <div style="text-align: center; margin-right: 10px;"> <p>SPESSA DESTRA (LATO CATENA)</p> </div> </div>
<p>We insert the right bushing (chain side) also positioning the right plate</p>	<p>We also insert the opposite (left) bushing with the relevant plate.</p>
	<p>During closing the shaft may have too many spacers and gets stuck (turns with difficulty), in this case reduce them. Conversely, once the bushing is completely closed the shaft may have axial play. In this case add spacers.</p>



I insert the external spacers



**A.** This measurement must be at least 4mm to prevent the crank arm from touching.

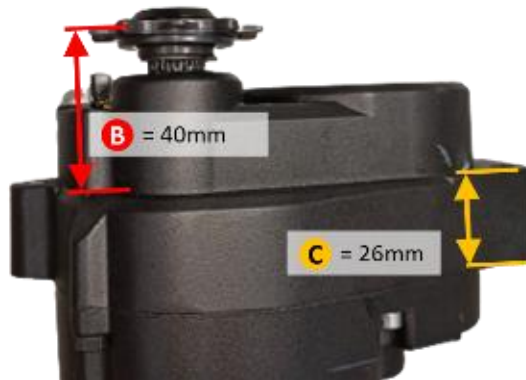
**B.** This measurement must be at least 8mm to ensure sufficient sealing



Install the two additional plates using the 4 M6x20 countersunk screws and related nuts. Don't tighten the screws too hard as we still need to adjust the tilt



Install the crank with the entire chainring assembly assembled, tighten the screw well, bringing the crank into contact with the previously positioned spacers.



To calculate the quantity of spacers we must first measure:

A. The distance between the pedal chainring and the plate. For example it measures 8mm.

B. Measure the distance between the pinion and the underlying edge. 40mm

C. The width of the fastening ear. 26mm abundant

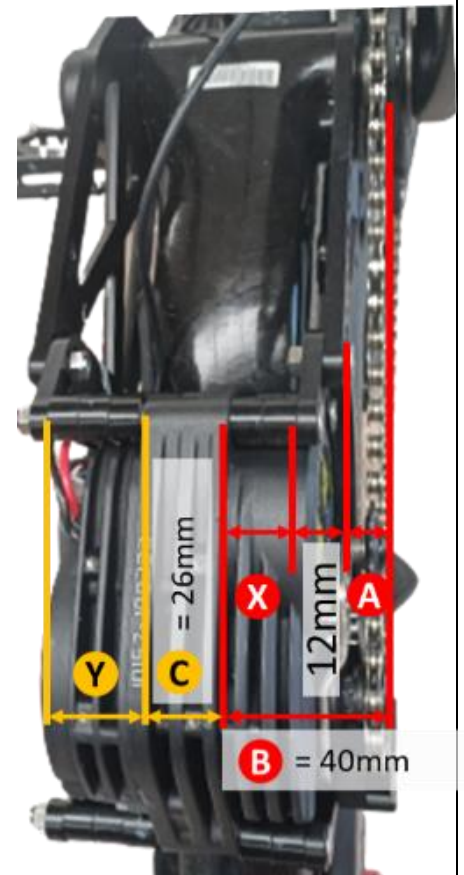
We know that each plate is 6mm, we subtract everything from measurement B:

$$\text{Thickness } X = B - (A + (6 \times 2)) = 40 - (8 + (6 \times 2)) = 20\text{mm}$$

On the chain side I will have to add two 10mm spacers [16].

$$\text{Thickness } Y = \text{BB width} - (C + X + (6 \times 2)) = 92 - (26 + 20 + (6 \times 2)) = 34\text{mm}$$

On the left crank arm side I will have to put 3 10mm spacers [16] and 3 washers [N].







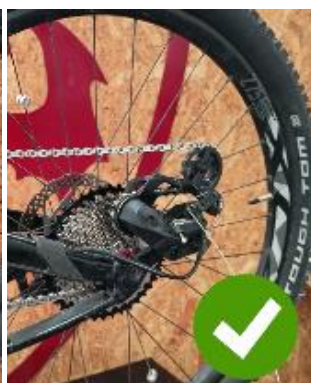
I insert all the spacers into the three holes that support the engine. Keep the nuts on the left side and the screw heads on the right.



Position the engine well so that it rests well on the frame. Then tighten the three screws that support it and the 4 20mm screws. Also tighten the BSA bushings well.



I install the left crank (if necessary I add the spacers behind the pedal)



Fit the chain. You will most likely need to add some links. If the rear chain tensioner is too tight it means they need to be added. Please note that the sprocket is compatible with 11 speed or lower chain



Pay attention to which chain tensioner arm you fit. The arm must push the chain to flex. If the chain remains tight the engine will not work



Now we cut off the screws that stick out.  
Insert the 10mm cable tie into the slot located between the threaded holes.  
This clamp must hug the entire frame and prevent the engine from rotating and "falling".



It is now possible to finish the installation by inserting the cables, cable covers and any accessories as indicated in the other sections .





### 5.13 Installing the motor with In-Frame brackets

The In-Frame installation has the advantage of being compact and perfectly protecting the engine from impacts. However, it has vulnerabilities:

- The TSN arm bends in the opposite direction to the sliding of the chain and this causes a slight perceptible vibration on the pedal
- The sliding opposite to the flexion of the TSN arm puts a lot of stress on the internal spring, therefore it is necessary to replace the original spring with another softer one (this operation can only be carried out in our office in Mantua, it is carried out automatically if indicated on the order)
- It is necessary to manually bend the arm so that when at rest it is not tense and the spring is not stressed. Manual folding of this arm requires several trials and could be complex
- Often the screws that join the two plates are located in places that are difficult to reach
- The joined twin plates are less rigid than the "standard" installation, so the engine is likely to flex slightly to the right when engine thrust is high. This bending causes the pinion to work non-symmetrically and generates noise.

During the installation shown, the bicycle was placed upside down on a table to have the bottom bracket in a position convenient for the installer.

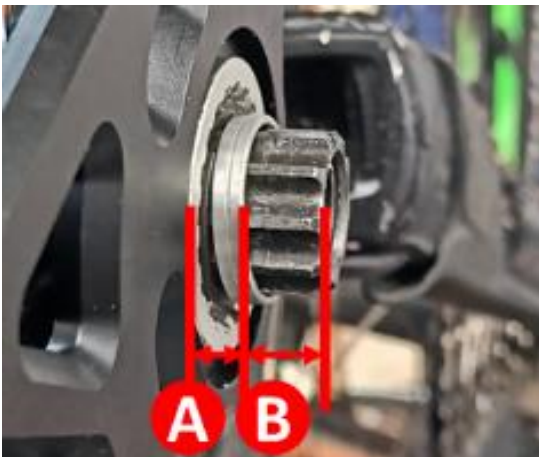
 <p>In this installation it will be necessary to assemble and disassemble the bottom bracket several times to obtain the right number of spacers on the shaft. To avoid ruining the fillets, grease them.</p>	 <p>Insert the shaft. See <a href="#">ADJUSTING THE SPACERS ON THE PEDAL SHAFT</a> for managing the spacers You can use a configuration suggested in the previous section.</p>		
<table border="0"> <tr> <td data-bbox="70 1209 826 1774">  <p>We insert the right bushing (chain side) also positioning the right plate</p> </td> <td data-bbox="826 1209 1532 1774">  <p>We also insert the opposite (left) bushing with the relevant plate.</p> </td> </tr> </table>		 <p>We insert the right bushing (chain side) also positioning the right plate</p>	 <p>We also insert the opposite (left) bushing with the relevant plate.</p>
 <p>We insert the right bushing (chain side) also positioning the right plate</p>	 <p>We also insert the opposite (left) bushing with the relevant plate.</p>		



During closing the shaft may have too many spacers and gets stuck (turns with difficulty), in this case reduce them.  
 Conversely, once the bushing is completely closed the shaft may have axial play. In this case add spacers.



Insert the external spacers onto the pedal shaft



- A.** This measurement must be at least 4mm to prevent the crank arm from touching.
- B.** This measurement must be at least 8mm to ensure sufficient sealing





To calculate the quantity of spacers we must first measure:

- A. The distance between the pedal chainring and the plate. For example it measures 8mm.
- B. Measure the distance between the pinion and the underlying edge. 40mm
- C. The width of the fastening ear. 26mm abundant

We know that each plate is 6mm, we subtract everything from measurement A:

$$\text{Thickness } X = B - (A + (6 \times 2)) = 40 - (8 + (6 \times 2)) = 20\text{mm}$$

On the chain side I will have to add two 10mm spacers [16].

$$\text{Thickness } Y = \text{movement width} - (C + X + (6 \times 2)) = 92 - (26 + 20 + (6 \times 2)) = 34\text{mm}$$

On the left crank arm side I will have to put 3 10mm spacers [16] and 3 washers [N].



I insert all the spacers into the two holes. Keep the nuts on the left side and the screw heads on the right.



Use milled spacers in the points where the space between screw and motor is narrowest.





Position the engine well so that it rests well on the vertical frame tube (from which the saddle comes out).  
 Then insert the 4 20mm screws that join the two pairs of plates.  
 The nuts must remain hidden inside so as not to interfere with the chain and cranks.  
 Also tighten the BSA bushings well.



Do not exceed 20° of rotation of the TSN arm. If this angle is exceeded the spring could be damaged. This type of damage is not covered by warranty.



Insert the chain tensioner arm into the appropriate engine shaft.

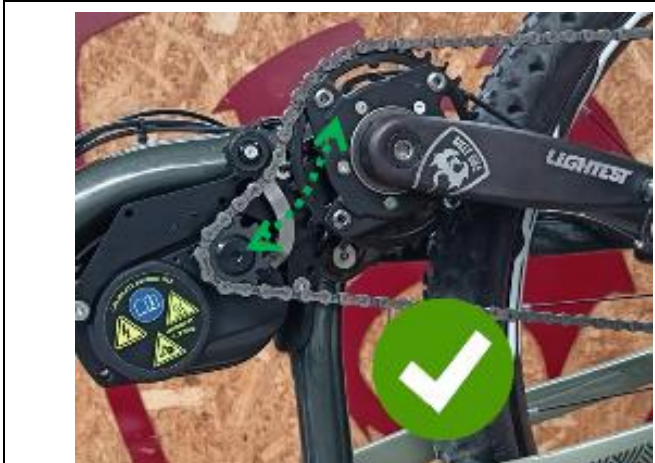


Screw the M6x0.75mm nut, make sure it is screwed straight, it is easy to insert the nut incorrectly and ruin it.



Now position the chain.  
 Please note that the sprocket is compatible with 11 speed or lower chain





Check that the chain is not tense at rest, but that it flexes in such a way as to make the chain tensioner arm work



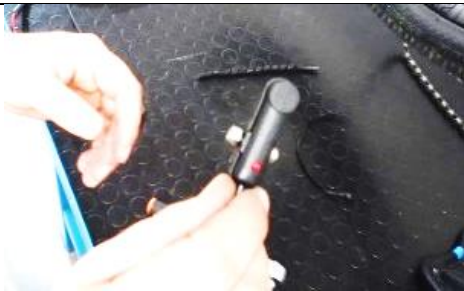
Check that the arm does not collide with the plates or other elements,  
The arm must move freely without any risk of being blocked by any fixed element.



### 5.14 Installation of the wheel sensor



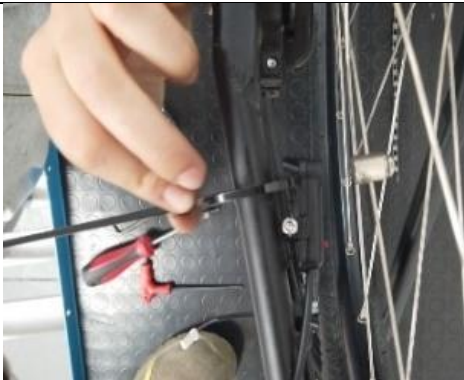
Carry out the following operations with the engine off and the battery disconnected.



Take the wheel sensor [24]



Glue the wheel sensor using the red double-sided adhesive already installed on the sensor. It is only present in some models



Secure it with a cable tie



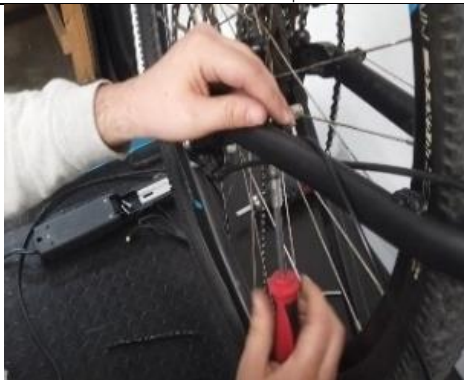
Put on a second cable tie



Cut off excess zip ties



Screw the magnet to the spoke



Screw the wheel sensor in such a way as to obtain approximately 5mm of space between the magnet and the sensor







### 5.15 Installation of signal wiring



Carry out the following operations with the engine off and the battery disconnected.



Secure the wheel sensor cable with a cable tie



Connect the cable to the motor



Hide the excess cable. Remember to secure the cable with cable ties to prevent it from touching moving parts



Take the display cable [28]  
The shape of the cable varies depending on the order



Connect the cable to the motor



Position the cable



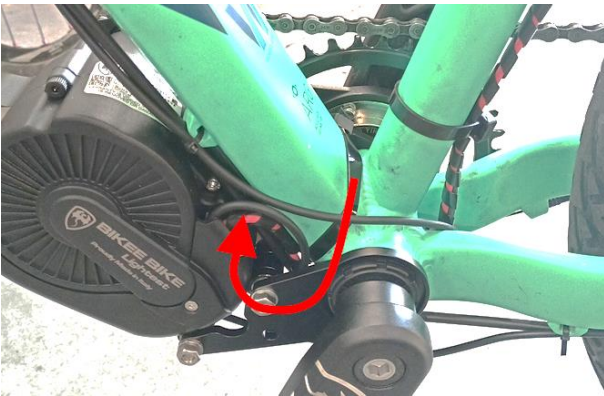
Secure the cable with a cable tie



Position the splitter and secure it with a cable tie



Make sure the cable is well secured to the frame with the help of other cable ties



Finally insert the large cable tie around the plates to prevent the motor from rotating and falling downwards



Secure all cables to the frame and carefully check that they do not touch or graze moving parts of the bike such as wheels, pedals and handlebars.

Also check that the cables are not pinched or can become pinched during normal use of the vehicle



## 5.16 Installing the pedals



Carry out the following operations with the engine off and the battery disconnected.



Take the right crank [2] and the crankset assembled in the previous [CRANKSET ASSEMBLY](#) section



Screw the crank as far as it will go



Place the crank on the bottom bracket. You will probably need to add more chain links, not included.



Position the chain as per photo

- Don't forget to insert spacers behind the right crank, without spacers there is a risk that the crank will rotate with an abnormal wobble



ATTENTION: the chain must **always** pass between the metal sprocket [14] and the plastic pulley [18]

Please note that the sprocket is compatible with 11 speed or lower chain



Insert and tighten the screw [23] in the crank



Insert the left crank and tighten the screw





	<p>WARNING: do not use the engine if the chain touches the sprocket, in case of meshing the engine could remain accelerated</p> <p>In this case there can be 3 solutions:</p> <ol style="list-style-type: none"><li>1. Exclude smaller rear gears</li><li>2. Install a smaller chainring (minimum 32 Teeth)</li><li>3. Change plates with a Medium model (if you have a SHORT) or Hybrid (If you already have a medium)</li></ol>	
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		<p>ATTENTION: the lightest system only works in the presence of a rear chain guide</p>
--	--	--



### 5.17 Completion of front and rear chain guide



Carry out the following operations with the engine off and the battery disconnected.

The following procedure explains the steps to attach the front chain guide. This chain guide is not mandatory, but is recommended to have a more reliable hold of the chain with the various rear gears. This component is supplied as an optional accessory.



Prepare the remaining cover [19] with the M3 and M4 screws [G][H] and the relative nuts [B][C]



Screw as shown in the photo with the M4 screw [H] and the self-locking M4 nut [B] on the opposite side



Screw as shown in the photo with the M3 screw [G] and the self-locking M3 nut [C] on the opposite side



Adjust the position of the chain guide and tighten the previously fixed screw

The steps to fix the rear chain guide are illustrated below. This chain guide is **not mandatory**, but is recommended to have a more reliable hold of the chain on the pedal chainring. It is usually recommended for **42 tooth** chainrings and in the Long installation. With the stable chain in other cases it can be omitted.

If you have a chainring other than 42 teeth and the chain jumps, check the direction:



Carefully check that the writing identifying the number of teeth on the chainring is facing the frame



Prepare the rod [7], the pulley [8], screw [G], washer and bushing [9]



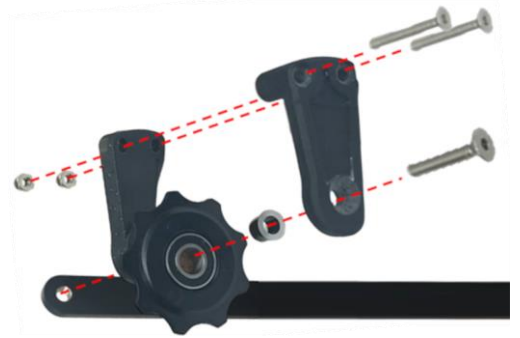
Insert the bush [9] into the pulley [8]



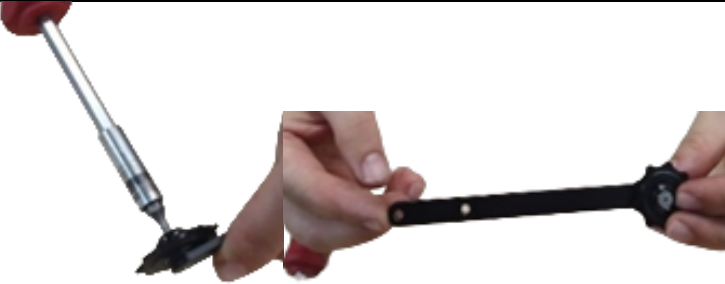
Insert the screw



Insert the washer



If you have this optional follow this indication for the assembly



Screw everything onto the rod



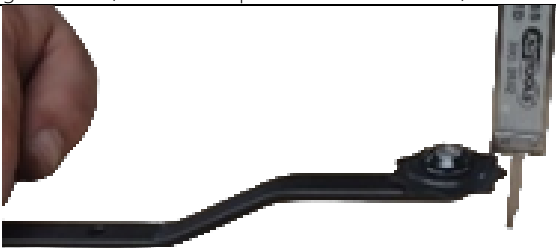
Now screw the rod to the right plate with two M4x16 screws and the relative self-locking nuts



Measure the distance between the pedal chainring and the chain guide rod (in our example case it is 22.6mm)



Disassemble the rod. Proceed to bend the rod to bring it to the correct distance



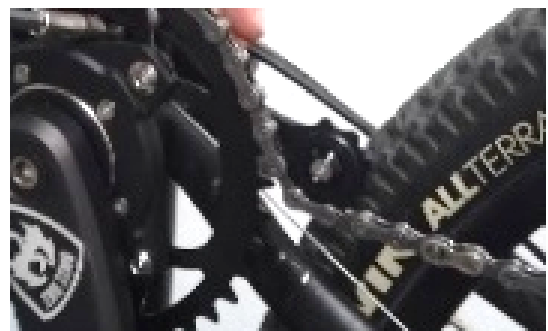
Check on a solid surface to ensure the clearance is correct



Reassemble the rod checking that the chainring and pulley are aligned



Screw with 2 screws to the bracket



Place the chain between the two chainrings







### 5.18 Connectors

There are 7 connectors on the engine. Each signal connector has a tab that allows it to be anchored and discriminates its correct position. The power connector has no indications, so follow the instructions on the side.



1	Power connector.
2	Handlebar accessory connector (includes Display, throttle and brake sensor signals).
3	Wheel sensor connector.
4	Light connectors . Its operation and intensity can be adjusted from the app (see SETTINGS SCREEN) . Each of the two light connectors supplies a maximum of 3W. The peak current and voltage values are 0.3A 13V. 
5	Service or battery communication connector.
6	Multipurpose connector, for external PAS sensor, external TSN sensor, gearbox, communication or service brake.

	1	To the female connectors it is possible to connect:
	2	- Brake sensors - Shift sensor
	3	Display connector
	4	Throttle connector



The wiring that goes to the handlebar ends with waterproof connectors that adhere firmly when connected, so in case of disconnection do not pull by the cable but by the extended connector



For correct operation of the system please respect the following points:

- Failure to respect the position of the connectors will damage the devices connected to it, therefore pay maximum attention.





- To disconnect the connectors you need to press only the tab with a pointed object. Do not pull the cable without joint pressure on the tab or it will be damaged.
- Any cutting, modification or crushing of connectors or cables is prohibited.
- It is only possible to connect connectors supplied by Bikee Bike SRL. Any other type of connector produced by the user or third parties risks damaging the system and will immediately invalidate the warranty.
- Scrupulously respect the lateral polarity indication for the connector (1). The company is not responsible for any type of damage caused by an incorrect connection.
- Connect each light connector (4) to the appropriate spotlight and DO NOT connect the cables with other connectors or battery cables. DO NOT connect the two light connectors together.
- Connectors (5) and (6) are normally unused, please do not connect them to external devices unless expressly indicated by the manufacturer.

Failure to do so will damage your system and will immediately void your warranty.

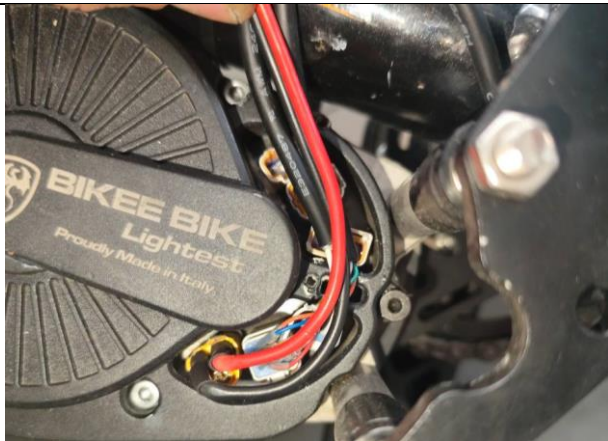


To properly remove the signal cables you need to use a sharp, hard object such as a small screwdriver or toothpick.

Insert it into the tab and then gently pull the cable.

The connector must come out without too much resistance

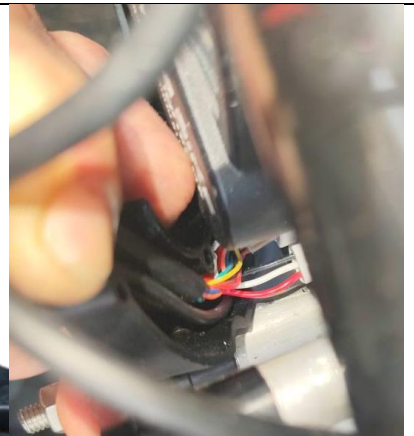
### 5.19 Closing the cover



Before close the cover prepare the cable in position



Put the cable in the recess of the cover, be careful that the cable mustn't go over the screw hole



Now screw in the 3 screws



you can also use the front hole to get the cables out

- The cover is used to hold the cables in place and prevent fine gravel or splashes from entering. Consider that the motor is already sealed internally to the IP54 standard



## 5.20 MT60 welding

For those who order without battery and outside Italy it is necessary to solder the battery connector manually. Below is the recommended procedure for soldering the connector safely and in a small space.



Before proceeding, turn off and disconnect the battery and charger to avoid short circuits  
A soldering iron set at a temperature of at least 380°C will be used, take due care and support to avoid injury.



- Material:
- MT60 supported by a stand
  - Red black cables (suggested 14AWG -> 2.5mm<sup>2</sup>)
  - Heat shrinkable (suggested Ø 6.4mm x 10mm)
  - Pond



Remove the sheath for a maximum of 5mm



Begin to solder both cables



Also fill the two + and - connectors in the MT60 connector with solder



Insert the two heat shrinks into the cable



Now join the cable to the connector by heating the previously placed solder slowly and with a steady hand



Repeat the procedure for the black cable



The end result must be a smooth weld. Try to pull the cable vigorously, it should not come off



Bring the heat shrink to the metal part



Heat it until it sticks well



Repeat on the black cable



Make a fold of the cables as in the photo, it will be easier to insert the engine cover



Check that the two poles just soldered are insulated and not shorted





### 5.21 Installation of brake sensors (optional)

The 4 images below show the recommended magnet and sensor positions. Positioning the "cutting" magnet with respect to the sensor (rightmost image) makes the reading insensitive and would block the engine.

The display indicates when the lever is pressed, so it is possible to establish whether the magnet is in the right position.



To make the brakes operational you need to connect the Lightest App via Bluetooth, go to the settings and adjust the **1** brake slider to 1V.

### 5.22 Installation of the throttle (optional)



Remove the original grip, after inserting the throttle into the handlebar.

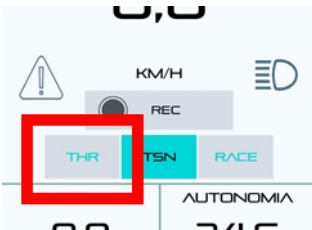


Check that the gearbox does not interfere with the throttle



Secure the throttle with the Allen key (not included) max 4Nm

Attention, the internal expander for the HALF and FULL throttles are suitable for handlebars with a maximum diameter of 18mm, if the diameter is larger it is necessary to roll some tape around the expander to fill the diameter, then cut in correspondence with the four recesses of the expander.



It is possible to enable or disable the throttle with the appropriate button on the main screen, or in the display in OPTIONS->TUNING->MODES

This button is only present if the SuperHero package is included and only if the throttle is connected.



### 5.23 Installation of PAS sensor (optional)

The PAS sensor must be inserted on the square shaft (ISIS shaft is not compatible) from the left side.

The PAS sensor dimension, shape and typology may be different from what is represented

This sensor works only with firmware from rev114 or greater and the firmware must be enabled from factory to work with pas sensor

 <p>Depending on the bottom bracket it may be necessary to replace the shaft with a longer one, or alternatively a specially milled crank can be requested (left in photo)</p>	 <p>The toothed part of the sensor must engage with the bottom bracket bushing</p>	
 <p>The rotary part of the sensor must engage with pressure on the shaft</p>	 <p>During installation, rotate the knurled part by a few millimeters to the right and left in order to facilitate entry onto the shaft.</p>	 <p>Now install the crank with the appropriate shims.</p>
<p>Be careful, the crank should not push on the sensor or it will be damaged, we recommend inserting the right number of spacers so that the sensor cannot stick to the bottom bracket bushing and thus no bare spaces are left on the shaft.</p>		
		



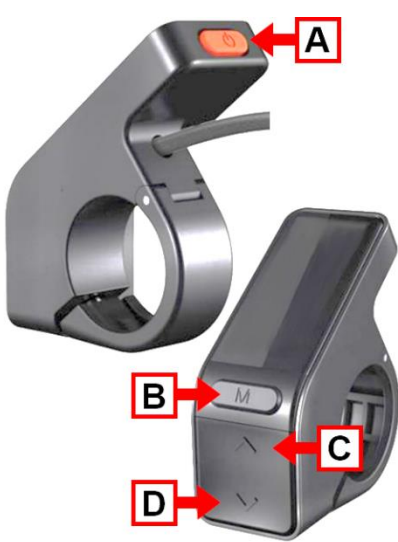


## 6. Display

The system is equipped with a display that allows you to view and modify the system parameters.

The type of display varies depending on the purchase made. Below are the instructions that refer to firmware version 2.2 of the SW102-V2 model.

### 6.1 Button overview



A		<ul style="list-style-type: none"> <li> Power on</li> <li> Shutdown</li> <li> Return to the main screen</li> </ul>
B		<ul style="list-style-type: none"> <li> Quick information navigation</li> <li> Navigation between menus</li> </ul>
C		<ul style="list-style-type: none"> <li> Increase in assistance or other values</li> <li> WALK mode activation</li> </ul>
D		<ul style="list-style-type: none"> <li> Assistance decrease or other values</li> <li> Light management</li> </ul>

### 6.2 Switching on and off

The display is turned on by quickly pressing the top button.

Switching off occurs by holding down the same top button.

Switching on takes approximately 3 seconds during which the Bikee Bike logo is displayed.

The display can turn off automatically if the relevant option is active.

### 6.3 Assistance management

The value of the assistance provided by the engine is numerical and can vary from 3 to 9 levels depending on the versions. Each level provides different support set at the factory and, in some versions, is customizable by the user.

The set level is increased by quickly pressing the arrow.

The level decrease occurs by quickly pressing the arrow.

The motor stops providing assistance when the set level is equal to 0 or if the system is blocked via the appropriate smartphone application (only in some versions), in the latter case a padlock icon appears.




### 6.4 Description of main screen

Display instructions refer to display firmware 56

<b>A</b>	Current speed of the e-bike in km/h.														
<b>B</b>	Bluetooth status, visible when the smartphone is connected.														
<b>C</b>	Light status indicator														
<b>D</b>	Quick directions, one quick press of the button  allows you to modify the displayed data. For more information see QUICK DIRECTIONS														
<b>E</b>	Assistance level. For further information see ASSISTANCE MANAGEMENT														
<b>F</b>	Residual charge indicator. The notches indicate: <table border="1"> <tr> <td>100%</td> <td>79%</td> <td>59%</td> <td>39%</td> <td>10%</td> <td>LAMP.</td> <td>0%</td> </tr> <tr> <td>80%</td> <td>60%</td> <td>40%</td> <td>10%</td> <td>5%</td> <td>5-1%</td> <td></td> </tr> </table>	100%	79%	59%	39%	10%	LAMP.	0%	80%	60%	40%	10%	5%	5-1%	
100%	79%	59%	39%	10%	LAMP.	0%									
80%	60%	40%	10%	5%	5-1%										
<b>G</b>	Longer gear  or more agile  indicator														
<b>H</b>	WALK mode active. This mode gives a little help while transporting the bike on foot. It persists as long as you hold it down   and stops above 6km/h (in the 250W versions).														
<b>I</b>	Light management. Available by long pressing   (Only on some versions) In some versions it is possible to change the action of this button by going to the SETTINGS of the display, then to BIKE and finally KEY DOWN. See SETTINGS SCREEN DESCRIPTION section for more information.														



## 6.5 Quick Directions

The parameters in the lower part of the display can be viewed cyclically by pressing  and  and I'm:

- TOTAL AND \*PARTIAL DISTANCE in Km
- \*TIMER It is a stopwatch that indicates the duration of the journey undertaken.
- CADENCE of the cyclist. Expressed in RPM. It is estimated by engine speed so may be inaccurate.
- CONSUMPTION in Wh/Km. The value increases as the selected assistance level increases.
- RANGE in Km. This value expresses an estimate of the remaining distance based on the history of previous consumption and the level of assistance. It should be noted that the absence of communication between the battery and the system makes the estimate of the charge, and therefore also of the autonomy, imprecise, by up to 20%, since it is calculated exclusively based on the voltage.
- \*CYCLIST AND ENGINE TORQUE in Nm. Expresses the equivalent torque at the pedal level. Being proportionate to the calibration carried out by the user, it cannot return truthful, but approximate, data.
- \*SYSTEM EFFICIENCY in percentage. The higher the value, the greater the distance traveled on one charge. This is only a useful estimate for optimizing system consumption, a real value can only be obtained with an external test bench.
- ABSORBED, \*OUTPUT \*AND HUMAN POWER in Watts.
- The value of that absorbed increases as the selected assistance level increases.
- The power rendered is that which is useful for moving the vehicle minus all losses. It is obtained through theoretical calculations and approximates the real one.
- Human power is estimated thanks to the movement of the torque sensor tensioner. It is strongly linked to the calibration carried out by the user and therefore cannot provide a reliable value but only an indicative one.
- \*BATTERY VOLTAGE in volts.
- \*BATTERY CURRENT in amps.
- \*TEMPERATURE the highest temperature between engine, electronics and battery in celsius is provided.

\*These parameters are visible only in more advanced versions






## 6.6 Navigating through the menus

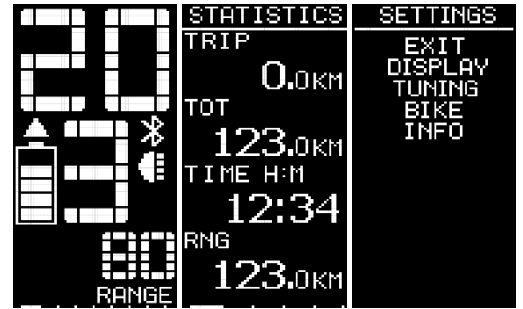
The display allows you to view these three categories:

- MAIN MENU
- STATISTICS
- SETTINGS



To navigate between these categories, hold down the button for a long

time   until the entire screen goes white.

Pressing quickly   you return directly to the main menu screen.



## 6.7 Statistics screen description

To access the statistics you need to long press the button  .

The statistics are divided into several screens. to press   to navigate cyclically between them.

DIST KM 2.3	SPD MAX KMH 24.3	CNS M WH/KM 62.3	P IN MAX W 602	PWR H MAX W 115	TRQ H M W 44	VOLT V 48.2	CURRENT A 0.0
DIST KM 0.0	SPD AVG KMH 15.2	CNS A WH/KM 5.2	P IN AVG W 345	PWR H AVG W 54	TRQ H A W 21	TEMP M °C 22.0	AMP MOT A 0.0
DIST KM 12:24	PED MAX RPM 83	EFF MAX % 83	P OUT MAX W 460	TRQ M M W 65		TEMP D °C 21.0	SPEED RPM 0
	PED AVG RPM 28	EFF AVG % 18	P OUT AVG W 210	TRQ M A W 32		TEMP B °C 0.0	POWER DISS 0

1. First screen

TRIP : Trip odometer  
TOT : Total odometer  
TIME : Travel time

2. Second screen

SPEED MAX : Maximum vehicle speed  
SPEED AVG : Average vehicle speed  
PEDAL MAX : Maximum vehicle speed  
PEDAL AVG : Average vehicle speed

3. Third screen

CNS AVG : Average consumption  
CNS MAX : Maximum consumption  
EFF AVG : Average efficiency  
EFF MAX : Maximum efficiency

4. Fourth screen

POWER IN AVG : Average power absorbed  
POWER IN MAX : Maximum power absorbed  
POWER OUT AVG : Average power output  
POWER OUT MAX : Maximum power output

5. Fifth screen

POWER H AVG : Average human power  
POWER H MAX : Maximum human consumption  
TRQ M AVG : Average engine torque  
TRQ M MAX : Maximum engine torque

6. Sixth screen

TRQ H AVG : Average human couple  
TRQ H MAX : Maximum human torque

7. Seventh screen

VOLT : Battery voltage  
TEMP M : Engine temperature  
TEMP D : Electronic temperature  
TEMP B : Battery temperature

8. Eighth screen

CURRENT : motor current  
AMP MOT : phase current  
SPEED : engine speed  
POWER DISS : Dispersed power

The parameters mentioned above are partially visible in the standard versions of the engine and can be unlocked through appropriate optional packages.





### 6.8 Resetting statistics

<b>A</b>	By pressing the button   navigate through the pages looking for the parameter to reset.	
<b>B</b>	Position the flashing white square on the parameter to be reset using	
<b>C</b>	Press the arrow   to confirm resetting.	

**A**
**B**
**C**

After 5 seconds of inactivity the square is disabled.

### 6.9 Settings screen description

To access the settings you need to long press the central button twice



Use this screen only when you are stopped in a hazard-free area

Four menus are available. You can choose one of these items by pressing with arrows and pressing the button . To confirm.

Some features are only available in certain versions.

DISPLAY submenu

--	--	--	--	--	--	--

**AUTO OFF**  
Waiting before auto power off when not in use

**UNIT**  
Choice of units of measurement between metric and imperial  
**ORIENT**  
Screen rotation to install the display upside down

**MAIN DATA**  
Choosing which data to show in the QUICK INFORMATION

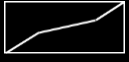
**STS DATA**  
Choosing which data to show in STATISTICS.

**PIN**  
Entering the system pin in order to take advantage of the lock.  
(The pin must be requested from the company)

**KEY DOWN**  
You can choose if the long pression of the down button (key) active the lights or active/deactivate the RACE mode  
\*available only in some models



TUNING submenu

<pre> SETTINGS TUNING_ BACK PRESET MAX VAL MODES RAMPS CURVE WALK MAX SPEED CALIBRAT                     </pre>	<pre> PRESET_ 1. 20% 2. 30% 3. 40% 4. 50% 5. 60% 6. 70% 7. 80% 8. 90% 9. 100%                     </pre>	<pre> MODES_ O PUSH&amp;GO O THR O PAS O TSN O LOCK                     </pre>	<pre> RAMPS_ ACCELER. 30% DECELER. 30%                     </pre>	<pre> CURVE_ P1 ASSIST 30% P1 TORQUE 30% P2 ASSIST 30% P2 TORQUE 30%                      </pre>	<pre> MAX VAL ONS WH/KM 0 TORQUE Nm 0 POWER IN W 0 POWER OUT W 0 BAT AMP 0                     </pre>	<pre> WALK_ ASSIST 50%                     </pre>	<pre> MAX SPEED PAS SPEED 6 THR SPEED 25                     </pre>
	<p><b>LEVELS</b> Each level of assistance can be customized by the user</p>	<p><b>MODE</b> Ability to manage assistance methods</p>	<p><b>RAMPS</b> System ramps, the higher the number the slower the response</p>	<p><b>CURVE</b> Possibility of modifying the intervention curve of the TSN mode</p>	<p><b>MODE</b> Ability to manage assistance methods</p>	<p><b>WALK</b> Indicates the intensity of help that the walk mode will provide</p>	<p><b>MAX SPEED</b> indicates the maximum speeds at which the motor stops assisting</p>

BIKE submenu

<pre> SETTINGS BIKE_ BACK WHEEL BATTERY TEETH/PAS RACE ADVANCE                     </pre>	<pre> WHEEL_ MM 2193  INCH 20.00"                     </pre>	<pre> BATTERY SERIE 10  CAPACITY 300WH 8Ah                     </pre>	<pre> TEETH/PAS CRANK 36 MOTOR 10 PAS GAIN 100%                     </pre>	<pre> _RACE_ O WATT/H O POWER IN O POWER OUT O BAT AMP O VOLTAGE O PAS                     </pre>	<pre> ADVANCE_ BRAKE VOLT 1V  BRAKE TIME 15SEC  THR ON 0.8V  THR OFF 4V                     </pre>
	<p><b>WHEEL</b> Setting the wheel circumference / diameter</p>	<p><b>SERIES</b> Battery cells count. Examples: 36V=10 series 48V=13 series</p> <p><b>CAPACITY</b> Setting the battery capacity</p>	<p><b>TEETH/PAS</b> You can adjust the teeth count of your pinions or the PAS behavior.</p>	<p><b>RACE</b> you can set which parameter the race button will lock</p>	<p><b>ADVANCE</b> Setting the brake behavior and the throttle range</p>

```

DEFAULT

O RESET
                    
```

**DEFAULT**  
Restore the default settings of the bike (the setting in the TUNING area)



## 6.10 Torque sensor calibration



The chain guide located under the motor output sprocket acts as a torque sensor, measuring the traction on the chain.

Depending on the installation, the chain guide performs different movements, it is therefore necessary to carry out a calibration maneuver as soon as the installation of the motor is completed.

The calibration procedure is carried out with the display. It is available in the settings in the TUNING section.

The motor must be correctly installed on the bike and the chain must be correctly positioned between the chain guide and the motor sprocket.

Keep your phone DISCONNECTED

Keep your bike on the road, in a road closed to traffic, away from dangers, with enough space to pedal and change gear. Do not keep your bike on stands or rollers.

Always use quick key presses

SETTINGS	SETTINGS TUNING	CALIBRATURA	CALIBRATURA	CALIBRATURA
EXIT	BACK	PRESS+	ENGLISH	NECESSARIA
DISPLAY	NATION	TO START	ITALIANO	PREMI +
TUNING	MODES		ESPAÑOL	PER AVVIO
BIKE	RAMPS		DEUTSCH	
INFO	CURVE		FRANCOIS	
	MAX POW			
	WALK			
	CALIBRATURA			

With quick presses, select TUNING and then CALIBRATION.



NON PREMERE I PEDALI!	NON PREMERE I PEDALI!	NON PREMERE I PEDALI!
PREMI +	PREMI +	PREMI +
	55%	100%

In a first phase you will be asked not to press the pedals to find out the rest position of the chain guide.

PREMI FORTE I PEDALI PER 5sec DOPO AVER PREMUTO +	PREMI FORTE I PEDALI!	PREMI +
	58%	100%

In a second phase you will be asked to press the pedals to find out the end position of the chain guide.

CALIBRATURA FINITA PREMI + PER USCIRE
PREMI I PEDALI E CONTROLLA LA BARRA

At the end of the calibration it is possible to check the outcome with the appropriate lower bar:


A good calibration has the bar to the left of the threshold line when the pedals are not depressed.

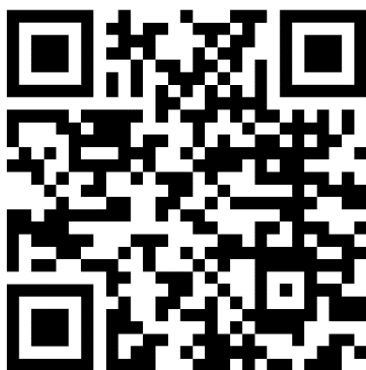
When you press the pedals the bar should move to the right and fill the screen with approximately 30kg of weight on the pedals.



## 7 Smartphone application

The instructions refer to the firmware version of the display 22 and the engine 61 onwards. Android 4.4 phones with Bluetooth 4.0 Low Energy (BLE) technology are compatible.

- The abbreviation "app" will be used to identify "application"
-  For your safety and the safety of others, never look at your phone or use the touchscreen/buttons while moving. If you need to use your phone and/or the app, stop in a safe place and put your phone away before continuing your ride.
- Using this application increases the consumption of your smartphone's battery. Take note of the battery level during use.



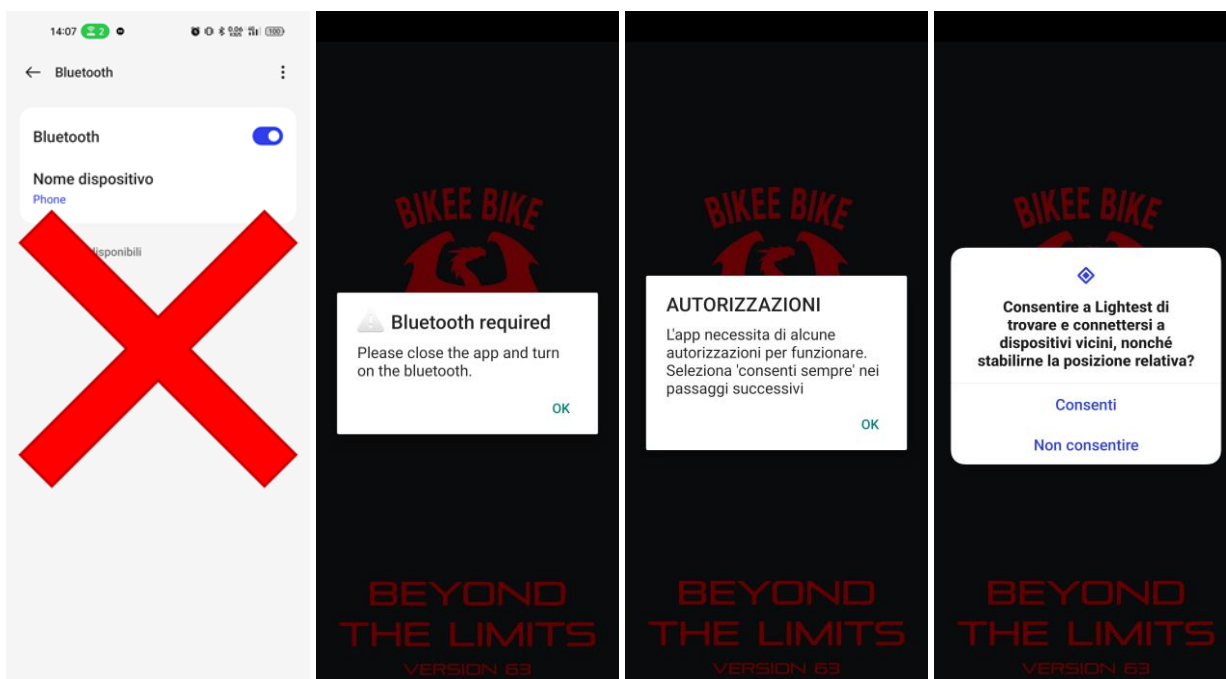
YOU can download the application from the Lightest website:

<https://www.lightest.bike/downloads>

Or alternatively scan the code on the side

### 7.1 First start

- Some steps vary depending on the phone model used
- The use of the app is limited to the connection with the kit.  
It is not possible to modify or view any data without first connecting.



The connection of the phone to the kit must be done **exclusively** through the app. **Never** use system settings or internal conflicts will arise. For correct use of the application it is essential to activate Bluetooth and authorize location services by pressing the "Always allow" button.





After the initial screen, a list will appear with all available devices nearby.

Search and select the "BIKEE BIKE o..." device from the list, the following numbers indicate the motor identification.

After a few seconds the words "CONNECTION..." will appear.

Wait for the connection, in case of error the app will close automatically.

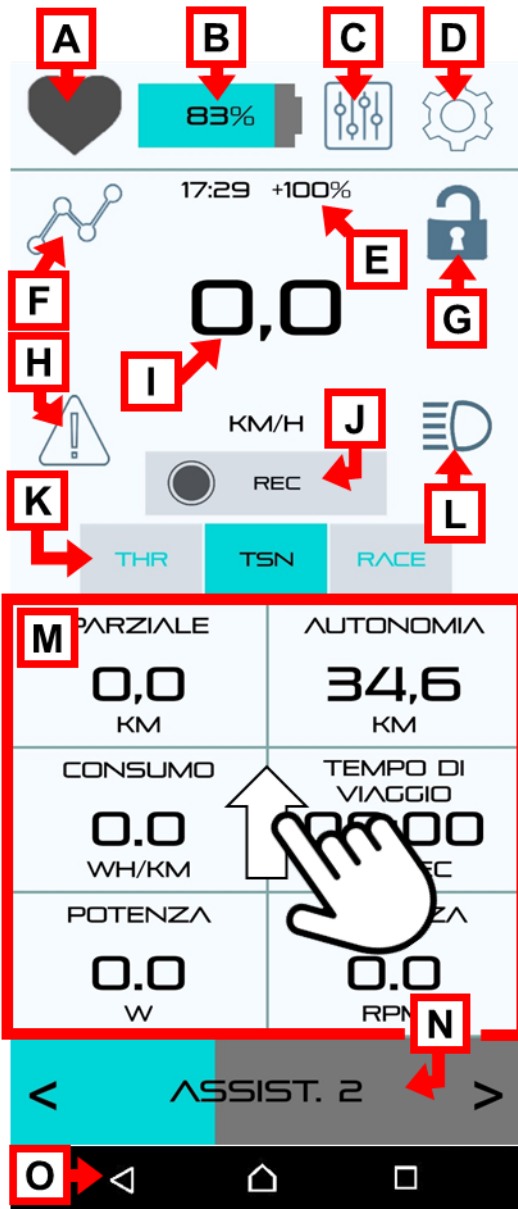
The selection of the kit is required only at the first start, after which it will always take place automatically.

You can disable automatic connection in the app settings.



## 7.2 Description of the main screen

☑ Items with the symbol are available only in some versions









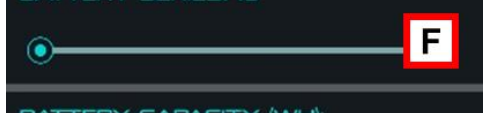




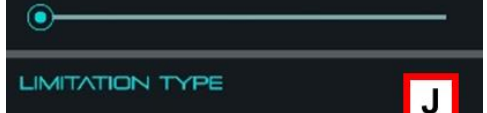



A	Heart rate monitor indication. See section K, L, M in <a href="#">TUNING</a> .
B	Bike battery charge indication. By pressing it you can view the battery voltage in Volts.
C	Access the <a href="#">TUNING SCREEN</a> . See the relevant section.
D	Access the <a href="#">SETTINGS SCREEN</a> . See the relevant section.
E	Watch and cell phone charging. This function can be activated from the <a href="#">SETTINGS SCREEN</a> .
F	Access the <a href="#">STATISTICS SCREEN</a> . See the relevant section.
G	Anti-theft mode. When pressed, the padlock will turn red and assistance will be forced to zero until the next press. Even after rebooting the system the lock is not reset. To unlock it is necessary to connect the phone with the unique PIN entered in the <a href="#">SETTINGS SCREEN</a> .
H	Accessing the <a href="#">ERROR SCREEN</a> . See relevant section.
I	Current speed of the e-bike in km/h. You can change the unit of measurement to miles in the settings
J	REC. button This function can be activated from the <a href="#">SETTINGS SCREEN</a> . It allows you to record all engine data in an Excel file (inside the phone's download folder).
K	Mode. The available modes will be visible here, and they are: PAS, the motor works through the cyclist's <b>cadence</b> . THR enables the throttle. TSN enables the torque sensor and therefore pedaling assistance RACE unlocks the system, see item K <a href="#">SETTINGS SCREEN</a> These modes may not be available depending on the version purchased.
L	Turning the lights on or off. On the <a href="#">SETTINGS SCREEN</a> it is possible to manage the intensity of each of the two outputs.
M	Quick directions section. You can choose which data to show and increase it from 4 to 6 by swiping from bottom to top
N	Support slider. You can slide your finger to change it or press the side arrows.
O	System keys. Normally hidden, you need to swipe up from the edge of the screen to view them.

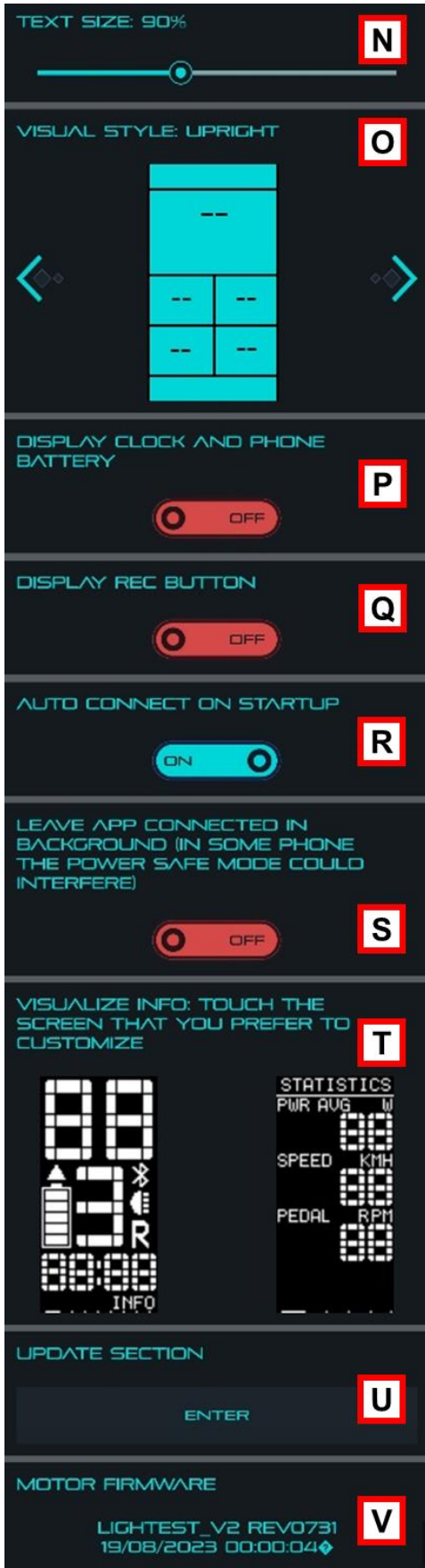
☑ You can change the font size and background from black to white from the [SETTINGS SCREEN](#).

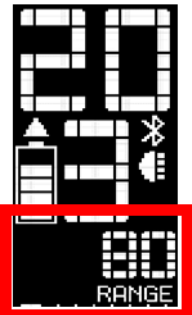


### 7. 3 Settings screen

Items with the symbol  are available only in some versions

	<p><b>A</b> Pressing the cross takes you back to the main screen</p>
	<p><b>B</b> Permanent PIN to lock the system, provided by the company and <b>not</b> present in the box.</p>
	<p><b>C</b> This pin is provided only in the SuperHero versions and has the function of enabling the Padlock (see detail D in the <a href="#">MAIN SCREEN</a>) and therefore the anti-theft mode. Without pins you can neither activate nor lock the kit.</p>
	<p><b>C</b> Wheel diameter, with HELP you can set the diameter in inches.</p>
	<p><b>D</b> Number of pedal chaining teeth, used to calculate cadence</p>
	<p><b>E</b> Number of engine pinion teeth, used to calculate the cadence</p>
	<p><b>F</b> Number of cells connected in series inside the battery. Example: 48Volt=13series 36Volt=10series</p>
	<p><b>F</b> Number of cells connected in series inside the battery. Example: 48Volt=13series 36Volt=10series</p>
	<p><b>G</b> Battery capacity in watt-hours, used in the calculation of the remaining battery life.</p>
	<p><b>H</b> Intensity of lights. With the two sliders you can adjust the brightness of each light connector. Enabling is then carried out on the <a href="#">MAIN SCREEN</a> with the E icon.</p>
	<p><b>I</b> Brake Management. With this slider you set whether the brakes are normally open or closed, keeping the slider at zero will ignore them. Once set, the item relating to the system reactivation ramp will appear below. Consider that this item is common to the gear shift sensor since it is connected to the same connector.</p>
	<p><b>J</b> NATIONS: In TUNING each state will impose a group of limitations. MANUAL: in TUNING you can modify the individual power, consumption and speed parameters as you wish.</p>
	<p><b>K</b> Race management. By opening it you access a special menu in which you can decide which unit of measurement is limited or not to the implementation of the race mode. (available only in some version)</p>
	<p><b>L</b> Choice of metric or imperial units of measurement.</p>
	<p><b>M</b> CLEAR: The background will turn white for better visibility in the sun. DARK: The background will become dark for better visibility in the dark.</p>



N	Ability to make app text bigger or smaller.
O	Ability to choose a display theme that keeps the screen vertical or horizontal.
P	Show the time and battery charge of your cell phone on the home screen. See detail L in the <a href="#">MAIN SCREEN</a> . (available only in some version)
Q	Show the record button on the home screen.
R	Enable auto connection to the latest used Lightest engine.
S	Normally when you switch to another app in the background the app logs out and closes. By activating this function the app continues to remain connected. (It is still in the experimental phase and may close anyway)
T	<p>Changing parameters on the display.</p> <p>By pressing the two images you can streamline or enrich the main and statistics screens on the display.</p>  <ul style="list-style-type: none"> <li><input type="checkbox"/> OFF Total distance</li> <li><input checked="" type="checkbox"/> ON Distance</li> <li><input checked="" type="checkbox"/> ON Travel time</li> <li><input checked="" type="checkbox"/> ON Clock</li> <li><input type="checkbox"/> OFF Pedal speed</li> <li><input type="checkbox"/> OFF Consumption</li> <li><input type="checkbox"/> OFF Autonomy</li> <li><input type="checkbox"/> OFF Human couple</li> <li><input type="checkbox"/> OFF Engine torque</li> <li><input checked="" type="checkbox"/> ON Efficiency</li> <li><input checked="" type="checkbox"/> ON Power in</li> <li><input checked="" type="checkbox"/> ON Power out</li> <li><input checked="" type="checkbox"/> ON Power diss</li> <li><input checked="" type="checkbox"/> ON Human power</li> <li><input type="checkbox"/> OFF Voltage</li> <li><input type="checkbox"/> OFF Batt. current</li> <li><input type="checkbox"/> OFF Engine speed</li> <li><input checked="" type="checkbox"/> ON Motor current</li> <li><input checked="" type="checkbox"/> ON Temperature</li> </ul>
U	Updates section, to be used in case of technical assistance.
V	Engine firmware version.



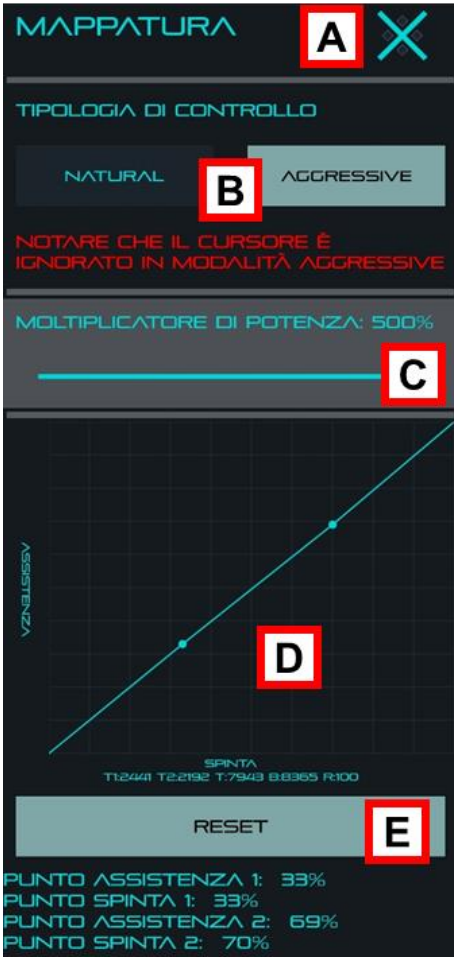


### 7.4 Tuning screen

Part of the entries or the page itself may be obscured or missing depending on the version

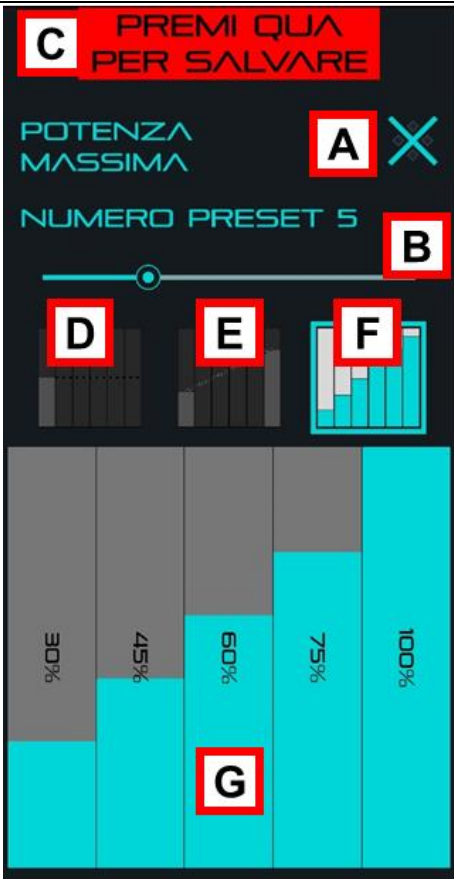


A	Pressing the cross takes you back to the main screen
B	Acceleration ramp, the higher the value, the smoother the response.
C	Deceleration ramp, the higher the value, the longer the assistance will last.
D	Function that enables the engine from standstill. When it is active, placing your foot on the pedal will activate the motor. When deactivated, the motor starts after a short rotation of the pedal.
E	Torque curve. By pressing on the graph it will be possible to manage the curve as described on the next page.
F	Customization of assistance levels. By pressing on the coffin a menu will open and you can manage the levels as described on the next page.
G	Set the state of the RACE button at the power on (available only in some version)
H	Set the state of the LOCK button at the power on (available only in some version)
I	Maximum torque delivered in walk mode.
J	Power, consumption and speed sliders. These items can be simplified by the <b>COUNTRIES</b> slider when the H parameter of the <a href="#">SETTINGS SCREEN</a> is active. Except for the "power" slider, if left at zero, the engine will deliver maximum performance referring to that parameter
K	Full speed. This item can be simplified by the <b>COUNTRIES slider</b> when the <a href="#">SETTINGS SCREEN H parameter</a> is active.
L	Torque sensor calibration. When pressed, the app will close and the procedure described in <a href="#">TORQUE SENSOR CALIBRATION</a> will start.
M	Pressing will start a Bluetooth search in which to select the heart sensor (Only compatible with Bluetooth4.0 Low Energy BLE devices).
N	Reference heart rate.
O	Time interval at which assistance is increased or decreased to maintain the target frequency set in parameter L.
P	By pressing RESET all the data on the page will be overwritten with the default ones



In this screen you can map the engine response.

A	Pressing the first cross takes you back to the main screen
B	NATURAL: The engine multiplies the power supplied by the cyclist obtaining a progressive and natural response. You can then <b>only change</b> the power slider. AGGRESSIVE: The motor forces a torque proportional to the curve set on the graph, thus obtaining direct and aggressive control.
C	The percentage indicated how many times the engine multiplies the power generated by the cyclist.
D	In this area it is possible to drag the two points that make up the curve to obtain a customized engine response. The more the points are to the right, the greater the thrust the cyclist will have to provide to get support from the engine. The higher the points, the more support the engine will provide. By pressing the pedal you will be able to see the current thrust on the graph.
E	Reset the factory curve.

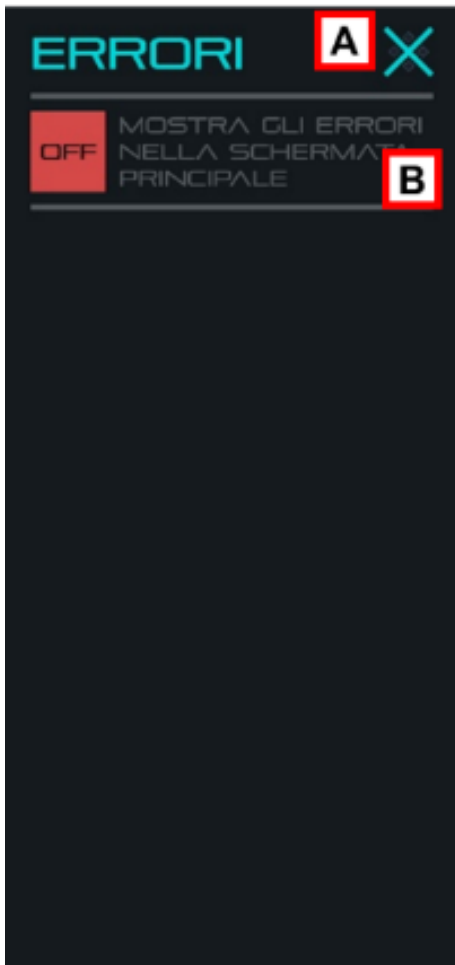


On this screen you can customize the individual assistance levels.

A	Pressing the first cross takes you back to the main screen.
B	Choice of the number of presets that can be used, from 3 to 10 depending on the versions.
C	After editing the cursors, you can save them by pressing the red button
D	By selecting this icon all cursors will move together.
E	By selecting this icon it will be possible to manage the first and last cursor, the central ones will move synchronously.
F	Selecting this icon will manage the cursors independently.
G	Cursor management area.



### 7.5 Errors Screen



- A** Pressing the first cross takes you back to the main screen.
- B** By activating this option you will be able to receive an update on the main screen in case of system errors.

Possible errors are:

- |                                |                                      |
|--------------------------------|--------------------------------------|
| 0 Invalid settings             | 16 High battery temperature          |
| 1 Memory error                 | 17 Unreadable engine temperature     |
| 2 DAC error                    | 18 Controller temperature unreadable |
| 3 ADC abnormal                 | 19 Unreadable battery temperature    |
| 4 Bluetooth error              | 20 Unreadable torque sensor          |
| 5 Battery error                | 21 Wheel sensor unreadable           |
| 6 Torque sensor                | 22 Throttle illegible                |
| 7 Math / thermal error         | 23 Brakes illegible                  |
| 8 Maintenance Suggestion       | 24 Invalid Limit                     |
| 9 High voltage                 | 25 Stall (blocked chain)             |
| 10 Low voltage                 | 26 Unanswered communication          |
| 11 Internal motor error (hall) | 27 Communication error               |
| 12 Abnormal overcurrent        | 28 ASI controller error              |
| 13 Generic error               | 29 Authentication error              |
| 14 High engine temperature     | 30 Legal speed limitation            |
| 15 High controller temperature | 31 System unlocked                   |

Some errors are used as notifications, so they are not anomalies, but information

### 7.6 QR update

It's possible to upload special instruction in the motor bike if required from the Bikee Bike Company, for example to enable new functionality like the SuperHero option or the High torque. To do it, it's necessary to follow these steps:

	<p>1. Wait for 30 seconds for all the data to load. Enter into the settings.</p>		<p>2. Scroll the screen down to the "UPDATE" section and select it. If it's not available, return to the main screen, wait for 30 seconds, and try again.</p>		<p>3. Touch "SCAN".</p>
	<p>4. It is possible that the camera permission will be requested: allow it. After granting permission, it will be necessary to go back to the main screen and repeat the previous steps.</p>		<p>5. Now, frame the QR code sent by the supplier.</p>		<p>6. If the code is correct, a green success message will appear. Otherwise, a red error message will be displayed. In case of an error, contact the supplier. You can now go back to the main screen and use the kit normally.</p>



### 7.7 Display Update

It's possible to update the firmware of the display via Bluetooth. The update is notified by the app as soon as it is available. If you already have the latest firmware no notification will be shown. Check from our website that you always have the latest version of the app.

<https://www.lightest.bike/downloads>

DISPLAY UPDATE PROCEDURE	<p>A. Turn off the display                  B. Press the up ^ and down v buttons at the same time and keeping them pushing, turn on the display.                  C. "display firmware update" will appear                  D. Now open the app and connect to DFU TARG device                  E. Follow the instruction on the app and press the green text button.                  F. Wait for the update ending...                  G. At the end of the update close the app</p> <p>If you encounter any errors, try clicking the green button. Otherwise, try using another phone.</p>
B	C D E F G

### 7.8 Motor Update

The motor update can only be activated by the Bikee Bike Company through to a special QR code.

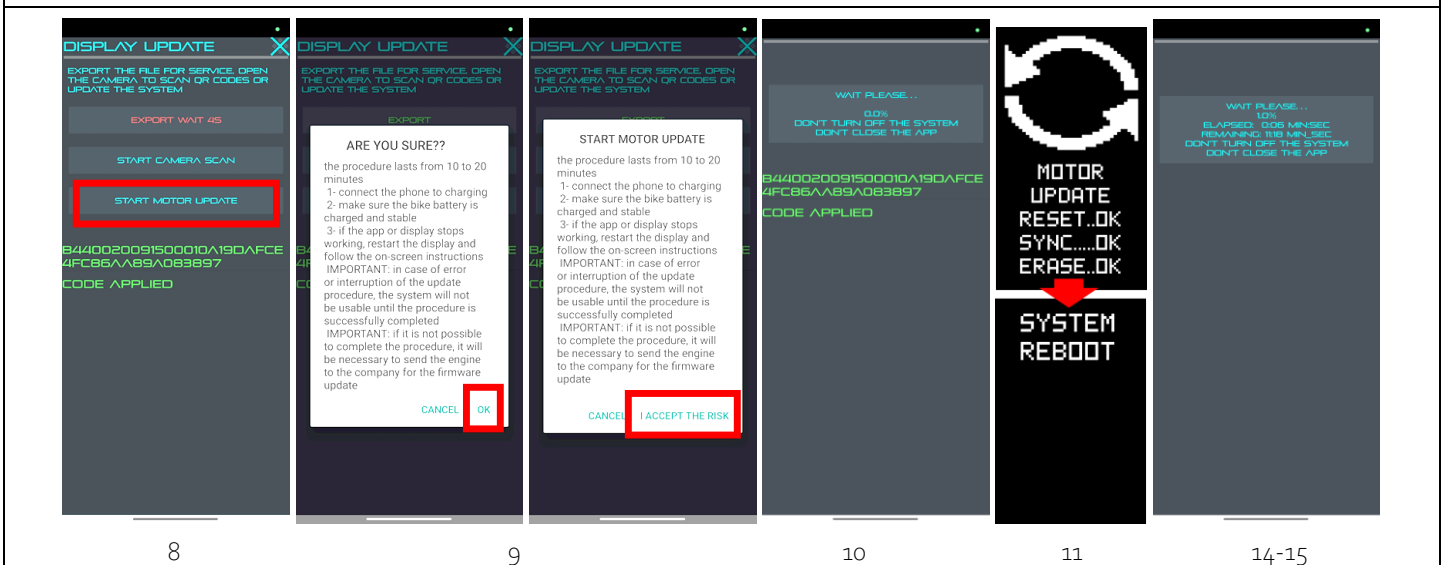
If your motor is ready for a firmware update you will receive a notification from the app, only then can you perform the update. Please don't contact Bikee Bike to request a QR update code, your request is USELESS because if the app don't send you the notification it mean that your motor is not ready.

<p>1. Check that you are using the latest app (rev89 or greater)                  You can download it from <a href="https://www.lightest.bike/downloads">https://www.lightest.bike/downloads</a></p>	
<p>2. Turn on the display and check that the display have the latest firmware (rev50 or greater) if not follow the steps of the section 7.7 Display Update, otherwise go to the point 3.</p>	
<p>3. Now turn on the display, open the app, and connect them.                  4. Click on the gear icon and open the OPTION screen                  5. Enter in the UPDATE page                  6. Wait 10second and open the CAMERA with the «CAMERA» button</p>	
3	4
	5
	6

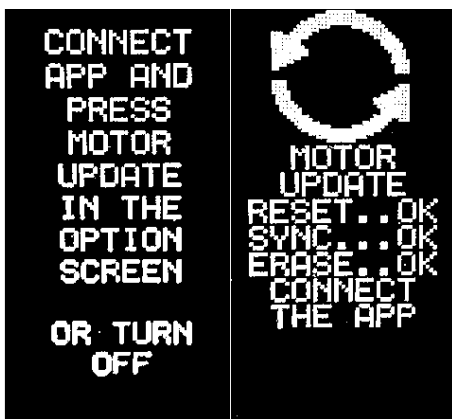




7. Scan the QR code provide from Bikee Bike. Please ask for this code only if the app notify to you that a MOTOR firmware update is available, without notification you request is USELESS because your motor is not ready for an update.
8. The «MOTOR UPDATE» button now is visible, click it
9. You have to agree 2 times at the pop-up window
10. The display and the app will enter in update mode
11. After few second the display will give you a «REBOOT» message and the app will close
12. Follow this message and turn on the display
13. The display will ask to connect the app, open the app
14. The app will automatically connect to the display and the update procedure will start.
15. It take from 10min to 20min, at the end of the procedure the system will turn off and the app will close. If some errors occur don't worry, you can restart the procedure by restart display and app.
16. Now turn on the system and check that the motor and the torque sensor work correctly, if it doesn't happen contact Bikee Bike company by email [info@bikeebike.com](mailto:info@bikeebike.com) or via whatsapp +39 0376 390846.



The update procedure may start automatically, in this case follow these instructions:



If you turn on the display and one of these two screen appear it mean that the motor update procedure is automatically started.

In this case you need to download the latest app version from our website: <https://www.lightest.bike/downloads>  
Open the app and connect it to the display called "BIKEE BIKE ERROR"

The app will automatically start the update procedure that takes from 10 to 20minutes. Is fundamental that the app is always opened during the entire procedure or the update will stop and you will start it again.

If some errors accords during the update turn off the display and close the app. Then turn on the display and restart the procedure.



## 8 Maintenance

Maintenance operations must be carried out by qualified and authorized personnel.

Observe the instructions on the specific safety regulations to be applied to the maintenance of the ebike kit contained in the [SAFETY CHAPTER](#).

Any type of intervention, including maintenance, must always be carried out with the ebike kit turned off. When carrying out these operations, scrupulously follow the instructions in the instruction manual.



Disconnect the machine from the electrical charging system before carrying out any cleaning or maintenance operations.

For any maintenance, setup, disassembly and reassembly, etc. in addition to the indications contained in this manual, the general workplace safety regulations in force in the place where these operations are carried out must be respected.

### 8.1 Periodic Maintenance

1. Periodically clean the kit components using a soft damp cloth accompanied by non-aggressive detergents.
2. NEVER use high pressure water to clean the kit components.
3. NEVER immerse the kit components in water.

Below are two tables with indications relating to correct maintenance and inspection planning. If the cyclist weighs more than 80kg, double the frequency of checks shown in the tables.

I Abbreviation for "Inspection"

M Abbreviation for "Maintenance"


U Abbreviation for "Customer Maintenance/Inspection"

E Abbreviation for "Maintenance by expert customer or service center"

A Abbreviation for "Advanced Maintenance by an authorized service center"



Note	Description	before every outing	Every 2months or	Every 2000 km	Every 5000 km	Every 10000 km
I, U	Check that the two oil seals present are well positioned and effective in their seal	•				
I, U	Check that the brake sensors stop the engine assistance during the first 10 meters (if installed)	•				
I, U	Check that the pedal and motor freewheels work properly. Engagement must occur within 20° of crank rotation, and are not loose.	•				
I, U	Check that the Bikee Bike unit is not loose or damaged, and that all screws and ring nuts are present and secure. Check that the spider-chainring assembly and the pinion have no loose screws	•				
I, U	Check the Bikee Bike unit for any abnormal sounds		•			
I, U	Check that there are no deformed or bent parts		•			
I, U	Check that there are no grease leaks from the unit		•			
I, U	Check that the cranks are firmly anchored to the shaft		•			
I, U	Check that all connectors are clean, inserted and not damaged. Also check that the relevant cables are not scratched or pressed.		•			
I, U	Verify that the battery retainer works properly		•			
I, U	Check that the battery holder is securely attached to the vehicle chassis		•			
I, U	Check that there are no particular anomalies reported by the App. See <a href="#">ERRORS section</a>		•			
I, U	Check from the display or App that the wh/km consumption is normal		•			
M, E	BCD104 chainring replacement (crank chain ring)			•		
M, A	Replacement grease reducer				•	
M, A	Replacing gears, bearings, grease, free wheels					•

 We recommend to not disassemble and reassemble the pinion and the torque sensor arm often because these components are delicate and the presence of threadlocker increase the torque to apply with the possibility to damage them

## 8.2 Screw the freewheel

If the free wheel became loose it is the possibility to screw it in this way:



locate the hole on the freewheel ring nut



Place a flat screwdriver or similar on the hole



Gently tap with a hammer the screwdriver to force the ring to rotate.

 The ring nut must always rotate clockwise



## 8.2 Extraordinary maintenance

Extraordinary maintenance is required in cases of faults or breakages due to intense use, unforeseeable accidents or inappropriate use of the e-bike kit.

The situations that may arise from time to time are completely unpredictable and therefore it is not possible to describe appropriate intervention procedures.

If necessary, consult the technical service to receive instructions appropriate to the situation.

However, extraordinary interventions require good work experience in the electrical, electronic and mechanical sectors.

In any case, before starting an extraordinary intervention, always consult the manufacturer to confirm the correctness of the planned intervention.

All interventions, mechanical or electrical, ordinary or extraordinary, must in any case be carried out by specialized personnel (see AUTHORIZED ASSISTANCE).

## 8.3 Different behaviors

Below are a series of behaviors encountered by users, which do not present any risk for the user or the instrumentation, with related resolution suggestions

	Behavior	Suggestion
1	The odometer decimal value is approximated by default compared to the units on the display. (Total error is 500meters)	A firmware version with correction is already in progress, we are working to make it remotely updateable. The value shown on the application does not have this error.
2	The pedal chainring has a wobble when I pedal backwards.	This oscillation is due to the fact that the cranks do not come into contact with the shaft. In the new versions with ISIS pedals we add stop spacers which solve the problem. For the square pin versions we are in contact with the supplier for a resolution. This oscillation does not in any way affect the functioning of the system and does not cause the chain to fall.
3	The Shimano 12-speed chain does not fit well into the motor sprocket	Unfortunately some Shimano chains have a narrow gap near the pins (which for example other KMC or SRAM 12V chains do not have), in these cases we recommend replacing the chain, if the sprocket set allows it even with an 11 Speed
4	The 12-speed chain makes strange meshing noises in the most extreme gears.	Unfortunately, when the chain tilts a lot, meshing noises can be generated. If the rear sprocket set allows it, we suggest replacing the chain with an 11-speed one.
5	Some non-Bikee Bike BCD104 chainrings do not fit the spider.	To keep the chainring-spider design compact we have enlarged the circumference of the spider to that of our supplier's chainrings. Unfortunately other suppliers have a smaller circumference that does not fit our spider. It is possible to file off the excess or you can request a larger spider from the company.
6	The holes in the bottle cage do not coincide with those in the battery holder	Since this is a kit it is impossible to satisfy the needs of all existing frames in the world, so it may happen that the holes are off-axis compared to those of the bottle cage. In this case, if the hole does not fall precisely in vital points such as the connector or the lock, it is possible to create additional holes in the battery support (not in the battery) paying maximum attention not to damage the cables. Contact the company for support in this operation. Any damage caused to the battery, motor or cables is not covered by the warranty.
7	The assistance goes to zero even when stationary and the displayed engine temperature is 1000°C Or MATH error	In the first batch of cards, an error in installing the thermals by the manufacturer made them vulnerable and on a small quantity it is possible that they were damaged. The anomaly occurs immediately since the error is already present in the production phase. It is highly unlikely that this will happen after several kilometers of use.
8	The pedal speed is negative and positive in apparently random, causing the engine assistance not to be activated	In firmware from 127 to 132 there is a communication error with the pedal sensor inside the engine. It is possible to correct this error with a firmware update directly from the Android phone. Simply report the following error to the Bikee Bike Company and request the update QR code mentioned in the ENGINE UPDATE section.





## 9 Troubleshooting

Below are the most frequent problems with their solutions; we recommend that you also consult the DIFFERENT BEHAVIORS section if you cannot find your case history below.

#	Problem	Cause	Solution
1	Once connected I cannot set any data on the App.	C11 The pin entered is incorrect or has not been inserted.	S11 Enter the 4-digit pin number shown in the package in the "settings" screen of the App.
2	The wheel speed remains at zero.	C21 The wheel sensor does not read the magnet correctly.	S21 The wheel sensor is too far from the magnet or the magnet is not installed correctly. (See procedure on page 36).
3	The wheel speed is different from the actual speed.	C31 The wheel inches entered in the application are incorrect.	S31 Set the appropriate wheel inches in the application.
4	The autonomy of the kit is poor	C41. The selected settings are too powerful and consume the battery prematurely (especially with 200Wh)	S41. Try decreasing the assistance, using the throttle less (if present)
		C42 The ratio used is too demanding for the terrain covered.	S42 Try to keep a shorter gear to tackle rough terrain at a higher engine rpm.
5	The engine produces too much power and is difficult to control.	C51 The assistance set is too high for your driving style.	S51 Set appropriate assistance in the application.
		C52 Ramps are set at a percentage that is too low for your driving style.	S52 Set the appropriate ramps in the TUNING screen. (Only available for SuperHero)
		C53 Wrong calibration was performed	S53 Try to repeat the calibration. This time press harder when required during the procedure.
		C54 Some parameter in the tuning screen have been modified	S54 try pressing the "RESTORE DEFAULT" button on the TUNING screen in the app to restore the factory data. The button is also available in the display settings (only in the most updated firmware versions of the display)
6	The engine runs too slowly or requires little assistance.	C61 The assistance set is too low for your driving style.	S61 Set appropriate assistance in the application.
		C62 The wrong serial number has been programmed in the settings	S63 Check the series in the settings, these are the most common: 10series = 36Volt, 13series = 48Volt, 14series = 52Volt, 15series = 56Volts
		C63 The battery is empty.	S63 Put the battery to charge.
		C64 You are using walk mode	S64 Walk mode has a limited number of turns so as not to overpower the walk.
		C65 The legal speed limits have come into effect	S65 Each power has its own speed limits established by law: 250W and 500W are 25kmh, 750W and 1000W are 42Kmh.
		C66 Some parameter in the tuning screen have been modified	S66 try pressing the "RESTORE DEFAULT" button on the TUNING screen in the app to restore the factory data. The button is also available in the display settings (only in the most updated firmware versions of the display)
		C67 Is the pedal speed correct or negative while you ride the bike?	S67 If the pedal speed is negative and you motor firmware between 127 and 132 probably the causes is the 8° in the section DIFFERENT BEHAVIORS
7	Too much time passes from the start of pedaling to the activation of the motor.	C71 The acceleration ramp set is too high.	S71 Try to bring the acceleration ramp to a lower or zero value. This modification is only available for SuperHero.
		C72 PUSH and GO mode is off	S72 Normally a short rotation of the pedal is required before the motor activates. Activating PUSH and GO will activate it immediately. This modification is only available for SuperHero.



		C73 Some parameter in the tuning screen have been modified	S73 try pressing the "RESTORE DEFAULT" button on the TUNING screen in the app to restore the factory data. The button is also available in the display settings (only in the most updated firmware versions of the display)
8	The engine doesn't work.	C81 THR mode was selected and the others turned off	S81 If you do not have the throttle you must use the TSN mode
		C82 Some connectors are not connected or are dirty.	S82 Check that all the connectors coming out of the engine are connected to the control unit and that there is no debris in the magnetic battery cable that prevents a correct connection.
		C83 The brake sensors (if present) are not installed correctly.	S83. Check that the magnet is well read by the sensor via the assistance value. Also check that the cursor in the settings is correctly set to normally open NO or normally closed NC
		C84 Null assistance has been set.	S84 Increase the value of assistance with the application or display
		C85 The battery does not supply voltage.	S85 If there is no voltage at the terminals with the lights on, contact the dealer.
		C86 Calibration was not performed or was not performed correctly	S86 Repeat the calibration as per paragraph 6.11.
		C87 The engine is locked in anti-theft mode	S87 You can unlock it from the display by entering your PIN, or from your phone after entering your PIN on the options screen. The correct PIN is provided by the company. It is only available with the SuperHero option.
		C88 The wrong battery series has been set	S88 It can be programmed from the OPTIONS screen, the common values are: 10series = 36Volt, 13series = 48Volt, 14series = 52Volts, 15series = 56Volts
		C89 There is an error code in the app that disables the engine	S89 Connect the app and enter the error screen. Contact support if necessary.
		C8A The chain engages in the upper part of the pedal ring	S8A if it engages, use a smaller chainring and a larger Mount
		C8B Some parameter in the tuning screen have been modified	S8B try pressing the "RESTORE DEFAULT" button on the TUNING screen in the app to restore the factory data. The button is also available in the display settings (only in the most updated firmware versions of the display)
		C8C perhaps it is necessary to do an autolearning procedure	S8C In this case the display turns on correctly and when you pedal (with the reset greater than zero) you hear a weak electric whistle. Contact Bikee Bike to check if this is the case.
		C8D Is the pedal speed correct or negative while you ride the bike?	S8D If the pedal speed is negative and you motor firmware between 127 and 132 probably the causes is the 8° in the section DIFFERENT BEHAVIORS
9	The engine stops when exceeding 25km/h or 6km/h	C91 It is not a defect.	S91 If you have a 250W or 500W version this is normal behavior due to the country selected, vice versa a limitation has been set that is too low in the TUNING screen.
10	The engine stutters, constantly turning on and off.  Or it works for few meters and that stop	C101 The selected country/restriction does not correspond to the power version purchased and the 6km/h limitations come into operation when only the throttle is used.	S101 Choose the country/limitation appropriate to your power version in the TUNING screen. With 250W kit this behavior is due to legal limitations .
		C102 The brakes are not well connected and give false readings.	S102 Check that the magnet is well read by the sensor via the assistance value.



		C103 The wheel sensor does not read the magnet correctly and therefore after five seconds the bike goes into protection mode, turning off the engine.	S103 The wheel sensor is too far from the magnet, the magnet is not installed correctly, the connector is not well connected or has badly connected crooked pins.
		C104 The chain engages in the upper part of the pedal ring	S104 if it engages, use a smaller chainring and a larger Mount
		C105 Some parameter in the tuning screen have been modified	S105 try pressing the "RESTORE DEFAULT" button on the TUNING screen in the app to restore the factory data. The button is also available in the display settings (only in the most updated firmware versions of the display)
11	The throttle does not work.	C111 The THR button is deactivated.	S111 It can be activated via the application or display.
		C112 The cable is disconnected.	S112 Check connections
		C113 Assistance is nil.	S113 Set appropriate assistance in the application.
		C114 The brakes are not well connected and give false readings.	S114 Check that the magnet is well read by the sensor via the assistance value.
12	I can't connect via Bluetooth.	C121 The bicycle is turned off.	S121 Check that the battery and display are turned on and connected
		C122 Some connectors are not connected or are dirty.	S122 Check that all the connectors coming out of the engine are connected to the control unit and that there is no debris in the magnetic battery cable that prevents a correct connection.
		C123 The phone is too far from the bike.	S123 Bring the telephone closer to the control unit.
		C124 The bike is already connected to another device.	S124 Disconnect the other phone or restart the battery.
		C125 The bike has entered update mode and changed its name to "DFU mode".	S125 Complete the update, restart the battery, disconnect the display cable or contact your dealer.
		C126 You are using your phone settings instead of the app	S126 Stop using phone settings, remove the device if it has been paired, and use the correct app. (Be careful not to use bikee bike BEST engine app)
13	Data via Bluetooth is not updated.	C131 You have moved too far from the bike and you are about to lose the Bluetooth connection.	S131 Bring the phone closer to the engine.
		C132 Bluetooth connection has been lost.	S132 Bring the phone closer to the kit and reconnect.
		C133 the display cable is not well connected or dirty	S133 try to check the cable status and be careful to not damage it
14	The phone keeps disconnecting.	C141 The telephone is too far from the control unit	S141 Bring the telephone closer to the control unit.
15	The elements that make up the application appear overlapped or cut off.	C151 The phone has too low resolution.	S151 The problem can be corrected by going to the option screen and adjusting the appropriate slider.
16	I can't reset the odometer.	C161 It is not a defect.	S161 The total odometer cannot be reset, use the trip odometer.
17	The autonomy displayed on the phone is very low even if the battery is charged.	C171 It is not a defect.	S171 The range is calculated based on your consumption, excessive consumption reduces the kilometres. It also happens immediately after purchase since the bicycle still knows your riding style.
18	The autonomy varies with assistance, and also with each recharge	C181 It is not a defect.	S181 The autonomy is calculated based on your consumption and is estimated based on the set level.
19	The engine remains accelerated	C191 The chain may be too short and by inserting the large rear	S191 Lengthen the chain



		gear the torque sensor involuntarily tightens	
		C192 The chain engages in the upper part of the pedal ring	S192 if it engages, use a smaller chainring and a larger Mount
		C193 the calibration was done poorly	S193 tries to redo the torque sensor calibration
20	The engine shakes without turning or stalls when I accelerate or pedal.	C201 There is an internal problem	S201 Contact supplier for assistance
21	The chain continues to jump on the pedal ring	C211 check that the chainring is not reversed, the writing with the number of teeth (32T, 36T or 42T) must be hidden towards the frame	S211 Rotate the chainring in the correct direction, for the 42T always use the rear chain guide.
22	The pedal shaft moves	C221 Check the internal shims	S221 Check that the number of shims is adequate, insert new ones and check that they are well distributed on the right and left.
23	The pedals are hard to move	C231 Check the shims and bases of the cranks	S231 Check that there are not too many shims pushing on the bearings, also check that the crank arm has not touched the plates.
24	I feel like the engine is idling without transmitting torque	C241 Mechanical problem	S241 It may be that the INTERNAL freewheel has been damaged. Do not open the engine and contact the company.
25	The chain jumps with the engine running, and not with the engine off	C251 the chain is worn or the rear wheel sprocket is worn or the chain does not hug the rear sprocket well	S251 Check that the chain is not worn with the appropriate tool. Replace the worn sprocket, often it is sufficient to replace just one rear sprocket and not the entire cassette. Check that the bike chain guide works well. Check that the chain links are healthy and there is not one stuck.
26	The sprocket makes noise when the chain engages, or the chain does not fit into the drive sprocket	C261 The motor is not well aligned or the screws are loose	S261 Check all screws and bushings of the bottom bracket carefully.
		C262 An incompatible chain is being used	S262 12-speed and some Shimano chains are too narrow for the sprocket, use an 11-speed.
27	As soon as I turn on the battery the engine starts without control	C271 The throttle has broken or is stuck in the "active" position.	S271 Try disconnecting the throttle or disabling the THR button. If the throttle is damaged, contact your dealer for replacement.
		C272 The chain is too tight and activates the torque sensor	S272 Lengthen the chain and redo the calibration.
28	The "motor update" screen is shown at the start up	C281 The Update procedure is started	S281 Follow the instructions in the MOTOR UPDATE section of the manual.
29	The spider and crown do not seem unscrewed and wobble	C291 the freewheel may have come loose	S291 Follow the instructions in the SCREW THE FREEWHEEL section
30	The chain jumps or slips as soon as I push the pedals a little	C301 The 36T, 34T or 32T chainring was mounted backwards	S301 Rotate the crown in the correct direction, see CRANKSET ASSEMBLY section
		C302 The rear chain guide has not been mounted in the long mount or in the 42T chainring	S302 These two types of installations require the rear chain guide
31	The pedals spin, or the freewheel drags in both sides	C311 The freewheel has come loose	S311 You can tighten the freewheel by following the instructions in the SCREWING THE FREEWHEEL section
		C312 The freewheel has been damaged	S312 Contact Bikee Bike to purchase a new one
		C313 The crank has frayed	S313 Unscrew the crank from the freewheel if the thread is damaged identify if you need to replace both freewheel and crank or just one, you can contact Bikee Bike for support





32	When I turn on the display I get the error "SYNC"	C321 There is some weak connection	S321 Check the cable connection of the display and on the motor, check that the M3 screw of the plastic cover haven't damaged the cables.
		C322 The motor need an update	S322 Check that you have the latest app available at the link <a href="https://www.lightest.bike/downloads">https://www.lightest.bike/downloads</a> , then update the display following the instructions in the DISPLAY UPDATE section and then check if the writing in point 28 appears
33	When I turn the cranks the chainring has a strange wobble	C331 The spacers behind the crank arm have not been installed	S331 See the ADJUSTING SPACERS ON THE PEDAL SHAFT section at the bottom of each page of the ISIS and square shaft describes how to use the spacers to remove wobble
34	The engine pinion sways	C341 The seeger behind the engine pinion has come out of its seat	S341 remove the pinion and check the 14mm seeger, if it is damaged replace it
35	The chain guide touches the chain		
36	The app doesn't connect and gives me the error "device does not support UART"	C342 You are using the wrong app.	S361 Our app is only available for Android phones at the link: <a href="https://www.lightest.bike/download">https://www.lightest.bike/download</a>



## 10 Decommissioning

### 10.1 Deactivation

The product in question is produced and built according to criteria of robustness, durability and flexibility which allow it to be used for many years. Once the end of its technical and operational life has been reached, it must be deactivated, i.e. put out of service and in a condition where it can no longer be used for the purposes for which it was designed and built at the time, still making it possible to reuse the raw materials that constitute it.

The same deactivation procedures must be observed in all of the following cases:

1. Taking the kit out of service for a long period of inactivity;
2. Decommissioning of the kit and storage in the warehouse;
3. Final dismantling of the kit and subsequent disposal.



The manufacturer does not assume any responsibility for damage to people or things resulting from the reuse of individual parts of the product for functions or in assembly configurations different from the original ones. The manufacturing company refuses any recognition, implicit or explicit, of suitability for specific purposes of parts of the product reused after definitive deactivation with a view to its demolition.

### 10.2 Deactivation procedure

To permanently deactivate the e-bike kit, proceed as follows:

1. Make sure the battery main switch is in the "OFF" position.
2. Disconnect the connection from the power supply (if it is charging) and/or disconnect the battery contained inside.
3. Uninstall the product from the bicycle by carrying out the installation operations in reverse.
4. Protect the parts of the machine that have not been treated (e.g. grease on metal parts without paint) - not to be carried out in the event of decommissioning for disposal.
5. Move the machine following the instructions in the [HANDLING section](#).



## 10.3 Disposal

The construction materials of the e-bike kit do not require particular disposal procedures. In case of demolition, refer to the local regulations for the scrapping of the materials that compose it.

The possibility of reusing some parts of the kit, both as mechanical units and as raw materials for other constructions, is subject to the total responsibility of the user.



The user company is in no way responsible for damage caused by the product if not used in its full version and for the uses and methods of use specified in this manual. The user company is in no way responsible for any damage to people or things resulting from the recovery of used parts of the product after its disposal.

## 11 After Sales

### 11.1 Sale of Bikee Bike products between private individuals



In the event that the owner of a kit decides to proceed with the sale of a part, or of the complete Lightest kit, the 2-year warranty on the product is considered null and void.

Therefore Bikee Bike Srl will not be liable for any damage reported by the new owner of the kit, even if the changeover is made within the terms indicated by the warranty.

To the user who decides to sell the product, we recommend first testing the correct functioning of all parts of the system, and then proceeding to sell the system.

Furthermore, it is advisable to always include this manual in the goods given to the new owner in order to avoid misunderstandings. If you have not already done so, it is advisable to contact the company to register the sale and collect the new customer's details: this will help Bikee Bike Srl to track down the new owner of the kit and facilitate assistance on the product.



## 11.2 Purchase of a DEMO product from Bikee Bike Srl

The purchase by the customer of a DEMO product from Bikee Bike Srl does not affect the quality and warranty standards of the product. In fact, each DEMO kit comes with:

1. Inspected in every part.
2. Bench tested to check the correct functioning of each component.
3. Equipped with new accessories.
4. They certify with new seals.



The warranty on demo kits certified by Bikee Bike srl is always 2 years and to be able to use it it will be necessary to show **the invoice issued at the time of payment or receipt of the product**

## 11.3 Shipping of the product to the customer's premises

The user who finds:

1. Total incompatibility of the kit or part of it with your bicycle
2. Malfunction of the kit, caused by inaccurate installation which requires intervention by the manufacturer
3. Need to carry out invasive modifications or periodic checkups on the device.

You will be able to arrange with Bikee Bike to ship the kit or part of it to the operational headquarters.

The procedure for sending the electric motor with its control unit must always be agreed with the company in order to avoid unnecessary movements and resolve any problems with telephone or online assistance.

Any shipping request must be made by telephone on 0376 390846 or by email to [info@bikeebike.com](mailto:info@bikeebike.com). In particular, it will be necessary to request the appropriate form where the elements will be verified which will be included in the packaging and the guidelines for correct shipment of the package will be defined.



1. If the user needs to include the battery in the material to be sent to the Mantua office, he cannot carry out the shipment independently, but must communicate the presence of the battery via a specific form, which involves a particular handling method (for dangerous goods - adr). Bikee bike will collect the material with a specific courier. Shipping costs will be charged to the user unless it is a warranty intervention.
2. The shipping cost of the kit, with or without battery, is always borne by the user except in the case in which the intervention is carried out under warranty.
3. Bikee Bike srl will not be liable for any damage caused by unsuitable packaging of the kit and which does not include the kit's original protective sponges. In the event that the kit is not shipped in the appropriate box and upon opening the kit, the staff reports the lack of the original packaging, the customer will be charged for the cost of the new packaging which will be used for the return shipment of the material.





## 12 Right of withdrawal and return of the product

### 12.1 Right of withdrawal for defective or non-compliant products

In the event of a lack of conformity or a malfunction, it is possible, within 2 years of purchase, to request repair or replacement of the product without any costs (not even return costs in the case of online purchases). From the discovery of the defect, the consumer has 2 months to report it, which should always be done in writing. If the repair is too expensive and the replacement is unfeasible, the customer can request termination of the contract by obtaining a refund on the kit, which will not include the following costs (if any):

1. Installation costs.
2. Shipping costs of the goods.
3. Costs of any custom modifications created at your request.

The so-called "right of withdrawal" is not covered by the guarantee.

### 12.2 Right of withdrawal for "change of mind"

The right of withdrawal for change of mind is only possible in the case of purchases made away from commercial premises (electronically - online or by telephone). In these cases it is possible within 30 days of receipt (extension of the deadlines by Bikee Bike srl - deadline established by law: 14 days), to exercise the right of withdrawal without having to provide particular justifications and request the refund of the sum paid for the purchase. Shipping costs are never included in the amount to be refunded.

The refund will be made (subject to shipping costs) obviously only if the good is returned intact, complete with all its components, with the original seal intact and must not have been manipulated in such a way as to reduce its original value.

Bikee Bike srl undertakes to refund the amount within 14 calendar days from the day on which the customer's communication of wish to withdraw was received, using the same payment method as the purchase transaction.

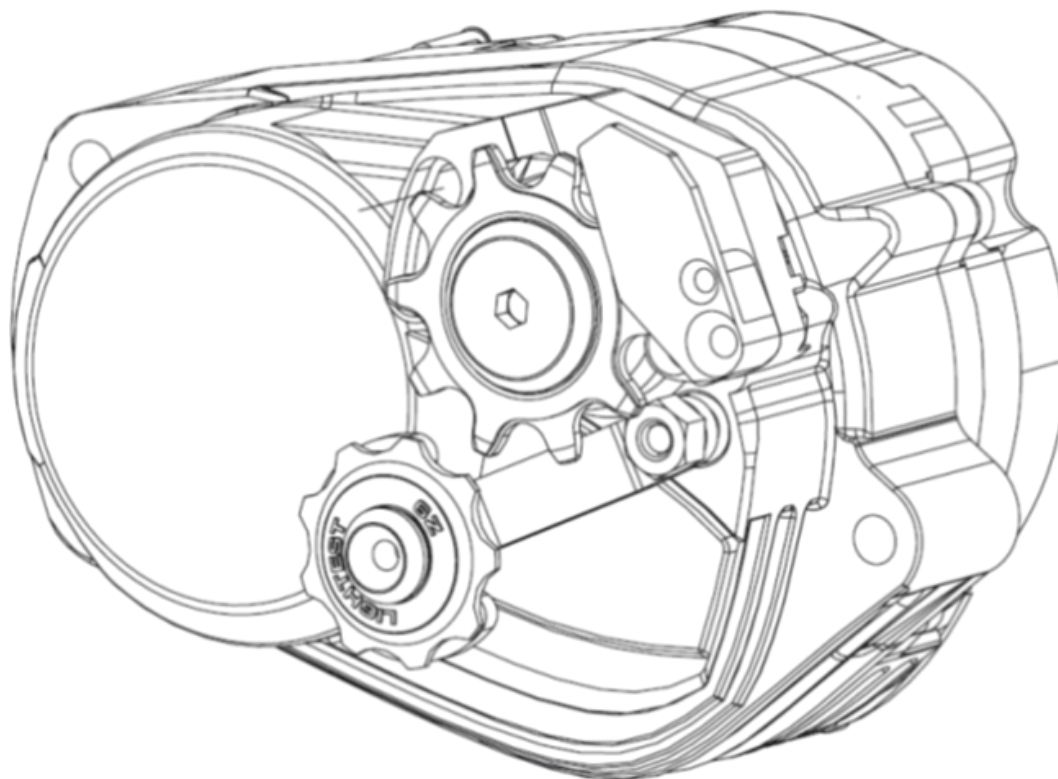


## 13 Revision list

Rev	Date	Changes
16	26/01/2024	-tables update p.64,66, 68 -cable tie usage p.42 -PAS sensor p.52
17	22/04/2024	-Display instruction updated p.55,56 -QR, Display, Motor update instruction p.66,67,68 -reminder check crank spacers p.43 -add explanations BB p.27 -cover management p.48
18	08/05/2024	-rear chainguide instructions p.46 -maintenance table updated p.70 -screw the freewheel p.70 -update troubleshooting table p.75 -motor update section more exhaustive p.68 -display settings, section BIKE, button down customization p.56 -update DIFFERENT BEHAVIOUR p.71
19	01/07/2024	-troubleshooting table update p.75, 76 -add display p.17 -tightening torque p.26



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